AS Economics

REVISION GUIDE

Compiled By

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Table of Contents

Paper 1 – AS Microeconomics **4**
Basic economic ideas **4**
Scarcity, choice and opportunity cost 4
Short run, long run, very long run 5
Opportunity cost 6
Positive and normative economic statements 7
Factors of production **7**
Specialisation 8
Different economic systems **9**
Planned economy 9
The market economy 9
Mixed economy 10
Production possibility frontiers (PPF) **11**
Possibility frontier and economic growth 12
Money 15
Types of money 15
Classification of goods and services **16**
Public good 16
Merit good 16
Demerit good 17
Demand **17**
Shifts in the demand curve 18
Supply **19**
Shifts in the supply curve 20
Elasticity **21**
Using knowledge of elasticity 23
The impact of elasticity on tax 25
Income elasticity of demand (YED) 27
Cross elasticity of demand 28
Price elasticity of supply 28
Market equilibrium --- demand and supply **31**
How resources are allocated in a free market **36**
Consumer surplus **38**
Producer surplus 39
Government intervention **41**
Maximum prices 41
Problem of maximum prices 41
Minimum prices 42
Tax **43**
Taxation 45
Subsidy 47
State provision of public services 48

Privatisation 49
Public ownership / nationalisation 50
Paper 2 Macro economy 51
Aggregate demand 51
Consumer spending (C) 52
Investment (I) 52
Government expenditure (G) 53
Net trade (X-M) 54
Aggregate supply (AS) 54
Equilibrium national income 57
Inflation 58
Money values and real data 58
Causes of inflation 61
Consequences of inflation 63
The balance of payments 65
Current account 65
Factors that cause a current account deficit 66
Causes of financial account surplus 67
Exchange rates 69
Factors that influence exchange rates 70
Appreciation in the exchange rate 70
Evaluation of an appreciation 71
Terms of trade 74
Absolute and comparative advantage 75
Example of comparative advantage 75
Economic integration 76
Benefits of free trade 77
Protectionism 79
Arguments for restricting trade 79
Government macro intervention 80
Fiscal policy 80
Supply side policies 83
Evaluation of supply side policies 85
Monetary Policy 86
UK monetary policy 86
Evaluation of monetary policy 87
Policies to reduce a current account deficit 89

Paper 1 – AS Microeconomics

Basic economic ideas

Scarcity, choice and opportunity cost

- **Scarcity.** These are resources that are limited. With scarce resources, we need to make choices about how to use and distribute them.
- **Non-renewable resources**. These are natural resources that are finite and scarce. Once used, they cannot be replaced. For example, coal, oil, precious metals, and gas are all finite.
- **Renewable resources.** Resources that can be replenished. Examples include wind, wood, fish, solar energy, and water.
- **Semi-renewable resources**. There are some resources that, in theory, are renewable, but if they are over-consumed they can become extinct and thus no longer available. For example, farmland should be renewable, but if we over-farm and use extensive quantities of chemicals, it could cause soil erosion.

Scarcity and choice

- Because of scarcity and unlimited wants, we need to make choices.
- For example, as a society, if we continue to over-fish, it means future generations may not be able to take any fish from the sea at all.
- As an individual, we need to decide how to use our limited income to purchase goods and services.
- Governments also have scarce resources (limited tax income). They need to make decisions about how to use tax revenue. Increasing government spending on the NHS means less potential for spending elsewhere.

The fundamental economic problem

- The fundamental economic problem is the issue of scarcity and how best to produce and distribute these scarce resources. Because of scarcity and limited resources, economics is concerned with:

    - What to produce?
    - How to produce?
    - For whom to produce?

Ceteris paribus

This means 'all other things being equal'. It means we ignore other variables and consider the effect of just one variable. For example,

- *Ceteris paribus* – higher oil prices should lead to less demand for oil.
- *Ceteris paribus* – higher interest rates should lead to lower economic growth.

The margin

In economics, we often use the term margin. This means the next particular action. For example:

- Marginal cost is the cost of an extra unit of output.
- Marginal benefit is the benefit we get from consuming the next unit.

Importance of margin

When deciding whether to eat another piece of cake, we consider the marginal benefit – not the average benefit. The first piece of cake may give high utility, but the second will give much less.

Short run, long run, very long run

- The short run is a situation where one factor of production is fixed, e.g. capital. In practical terms, it will be less than say six months.

- The long run is a situation where all main factors of production are variable. In the long run:

    - We have time to build a bigger factory.
    - Firms can enter or leave a market.
    - Prices have time to adjust
    - The long run may be a period greater than six months / year.

- The very long run is a situation where technology and factors beyond the control of a firm can change significantly.

    - e.g. in the very long run, new technology may make current working processes out-dated.
    - Government policy may change, e.g. on trade unions --- which influences an industry like mining.
    - Over time, comparative advantage of an economy will change, e.g. emergence of China's manufacturing industries, affected UK clothing firms.

Opportunity cost

- Opportunity cost is the next best alternative foregone.

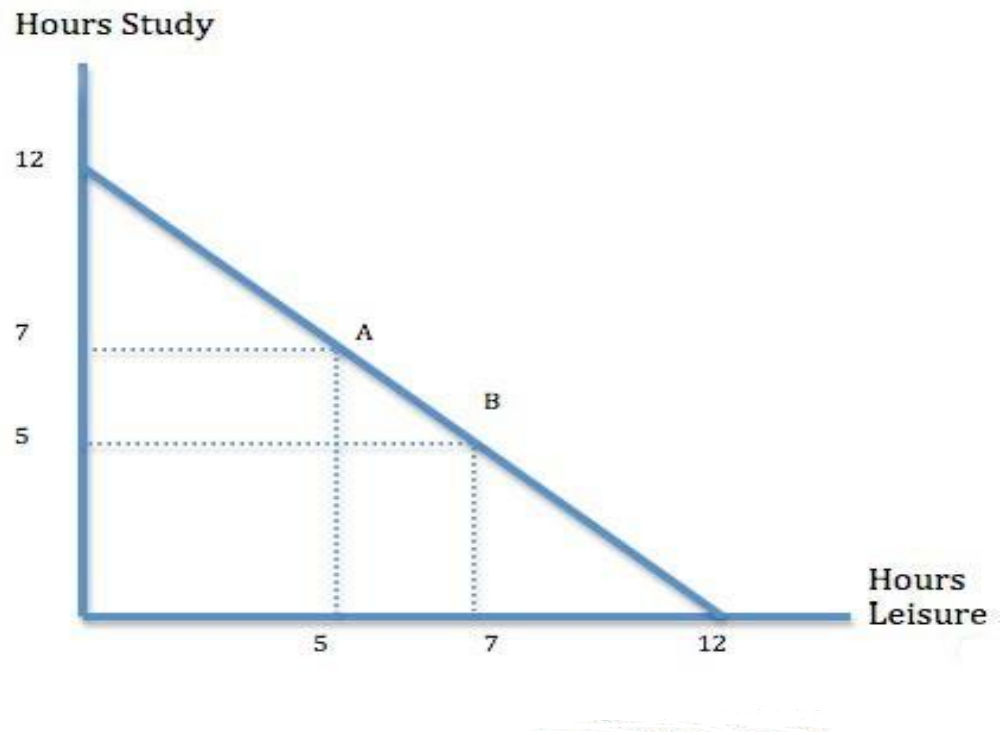
Examples of opportunity cost

- If the government spends tax income on defence spending, then this money cannot be spent on health care.
- If the government cuts tax, the opportunity cost is that they have less to spend (or use to reduce budget deficit).
- If we spend our time surfing the internet, we cannot spend this time studying economics.
- If firms spend all their money on advertising their new product, they cannot use that money to invest in developing new products.

Importance of opportunity cost

- Opportunity cost means we have to make decisions about the best use of time, money and resources. Sometimes there are two options that are good, but we need to choose the relatively best option.

Choice between study and leisure. Suppose we have 12 hours to spare. We can use these 12 hours for study or we can use the 12 hours for leisure.



- If we move from A to B, we can spend an extra two hours on leisure.
- The opportunity cost is that we lose 2 hours of study.

Positive and normative economic statements

A positive economic statement is based on facts that can be tested as true or false. For example:

1. In May 2015, the UK inflation rate was 0.5%.
2. A higher indirect tax will shift the supply curve to the left.

A normative economic statement is based on an opinion or a value judgement. People can disagree with these statements. For example:

1. The government should increase taxes on alcohol to improve the nation's health.
2. It is unfair students have to pay tuition fees in order to go to university.

Combining positive and normative statements

- Because oil prices have increased over $100 (fact), I believe the government should cut petrol tax (opinion)
- Because oil prices have increased over $100 (fact), I believe the government should subsidise the development of alternative modes of transport, such as cycling (opinion).

Note how the same positive economic statement (oil price increased) can lead to different opinions (normative) on how to respond.

It can depend on what people think is more important.

a) With cutting petrol tax, economists may be concerned with equality and making sure people can afford to travel.
b) With subsidising public transport, economists may be concerned with the environment and the external costs of oil.

Factors of production

Factors of production are items used in the production process to make goods and services, these include:

- **Land** – raw materials. For example, coal, fish, wood --- something which can be taken from the natural world without adaptation.
- **Labour** – workers able to participate in a productive process
- **Capital** – machines and equipment used in the productive process to manufacture goods.
- **Enterprise** – the human initiative to set up a business.

Reward for factors of production

- **Land – rent**. From owning land / property, an owner can rent out the property to a tenant who pays a monthly rent.
- **Labour – wages**. Workers will be paid wages by the firm who employ them.
- **Capital – profit.** A firm will invest in capital to help improve the productive process and if successful will lead to higher profit for a firm.
- **Entrepreneurs – profit**. Entrepreneurs are people who take risks to set up a business. The main aim is to make profit from setting up a business.

Specialisation

- Specialisation occurs when a country or firm concentrates on producing a particular good or service.
- In producing goods, firms may have workers specialise in particular jobs.

Division of labour

- Division of labour occurs when workers concentrate on different tasks within a firm.
- Rather than try to master all aspects of production, some workers will specialise at a particular job.
- For example, in a car-building firm, some will work on design, some on testing, and some workers will just do unskilled jobs such as painting the car.

Advantages of specialisation in the production of goods

- The division of labour gives workers time to gain skills for one particular job. Overall, they need less time to be trained.
- With specialisation and the division of labour, firms can be more efficient when producing on a large scale; it enables economies of scale, and lower average costs.
- Without specialisation and the division of labour, one person may be unable to produce a car on his own. But the division of labour makes a big production task manageable by spreading the work out.

Problems of specialisation

- The division of labour can make jobs highly specialised and repetitive, leading to boredom and possible diseconomies of scale.
- On an assembly line, if one person is absent, the whole production line may slow down if other people can't cover their job. Therefore, there needs to be some flexibility.

Different economic systems

Planned economy

- This is an economy where the government owns the means of production, and the government decides what and how to produce (e.g. the former Soviet Union).
- It is sometimes known as a command economy or Communist economy.

Advantages of planned economies

- The government can reduce inequality and make important public services available to all.
- The government can take into account externalities and protect the environment.
- The government can prevent the abuse of monopoly power.
- The government can ensure full employment by giving people jobs.

Problems of planned economies

- There is no profit motive, so people working for the government may have little incentive to cut costs and innovate.
- When government agencies control all areas of economic life, it is prone to bureaucracy, high administration costs, and corruption.
- The government may be slow to respond to changing consumer preferences; with price controls, we may end up with shortages or surpluses.
- The government may have poor information about what to produce, leading to shortages and surpluses.
- Consumers may face a lack of choice about goods to buy. People may be unable to set up businesses that they want.

The market economy

- A totally free market occurs where there is no government intervention in the economy.
- In practise, a market economy will involve some degree of government intervention, but most industries will be left to private firms.

Advantages of free market economies

- Free markets tend to result in an efficient allocation of resources because firms have a profit incentive to produce goods that are in demand.
- Firms also have an incentive to cut costs and be efficient, otherwise they will go out of business.
- Consumers have the freedom to choose the best products, which they need.

- It avoids government bureaucracy which could lead to inefficiency and corruption.
- The incentives of a free market encourages individuals to work hard and set up new business.

Disadvantages of free market economies

- Private firms can gain monopoly power, leading to higher prices for consumers and greater inequality.
- In a free market, public goods, like street lighting, will not be provided. Merit goods like education will be underprovided.
- There will be overconsumption of goods with negative externalities, leading to pollution and damage to the environment. There will also be over-consumption of demerit goods like alcohol and tobacco.
- Inequality will occur. In a free market, some will accumulate high levels of wealth and have high salaries, but others may experience unemployment and low wages.

Mixed economy

In a mixed economy, part of the economy will be left to private enterprise, but the government will intervene in various areas. For example:

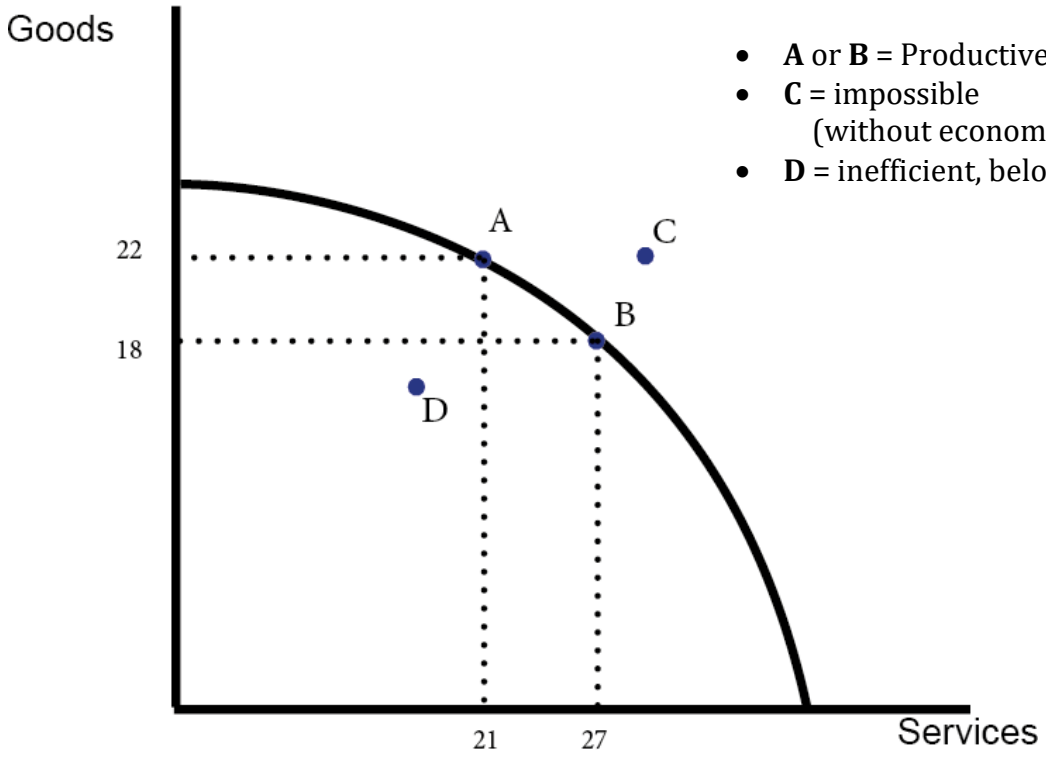
- Implement taxes on income and goods (e.g. VAT).
- Try to reduce relative poverty through redistributing income. This can be done with progressive taxation and welfare benefits.
- Provide services that are under-consumed in a free market (health care, education, welfare state, and national defence).
- Regulate markets, e.g. monopolies, regulations on the environment, and demerit goods (e.g. smoking bans).
- A mixed economy tries to get the best of free markets (efficiency, enterprise, innovation) but deals with some of the problems of market failure, including pollution, monopoly, and inequality.
- Most modern economies are mixed, with different levels of government intervention. For example, in the UK, the government spends approximately 40% of GDP. In the US, government expenditure is approx. 35% of GDP.

Government failure

- There is a danger that any government intervention could lead to an inefficient allocation of resources.
- For example, the government may lack sufficient information and government workers may have limited incentives to be efficient and productive.

Production possibility frontiers (PPF)

A PPF shows the maximum output that an economy can produce if the economy is maximising the use of its resources and operating efficiently.



Points on PPF Curve

- **A** or **B** = Productively efficient.
- **C** = impossible (without economic growth)
- **D** = inefficient, below potential

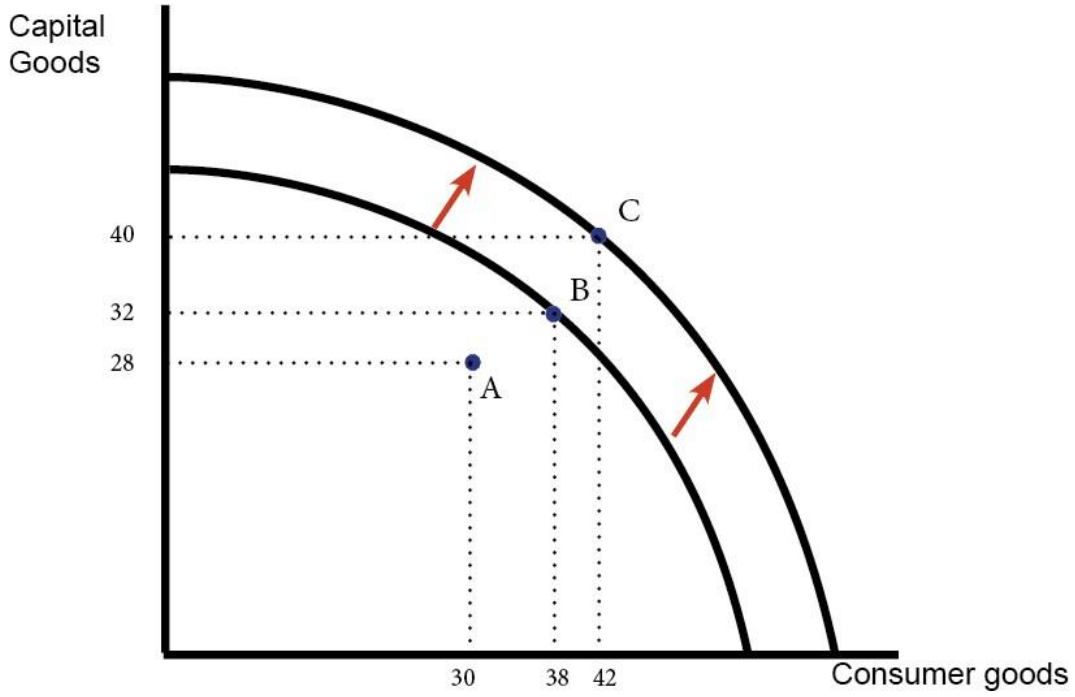
This is a simplistic production possibility frontier that shows a choice between goods and services.

- If we produce more consumer goods, it leads to fewer resources available for producing services.
- We could use all our natural resources and have many consumer goods, or we could have only few goods and concentrate on producing services.

Opportunity cost and production possibility frontier

- At point A, we have 22 goods / 21 services
- At point B, we have 18 goods / 27 services.
- If we move from point A to B, we gain an extra 6 units of services.
- However, **the opportunity cost** is that we have to forego 4 units of goods.

Possibility frontier and economic growth



- **Short run economic growth**. Moving from point A to B. This involves making better use of existing productive capacity.
- **Long run economic growth**. This requires a shift in the PPF curve to the right. This enables point C to be attained.

Causes of long run economic growth

A shift in PPF to the right can be caused by:

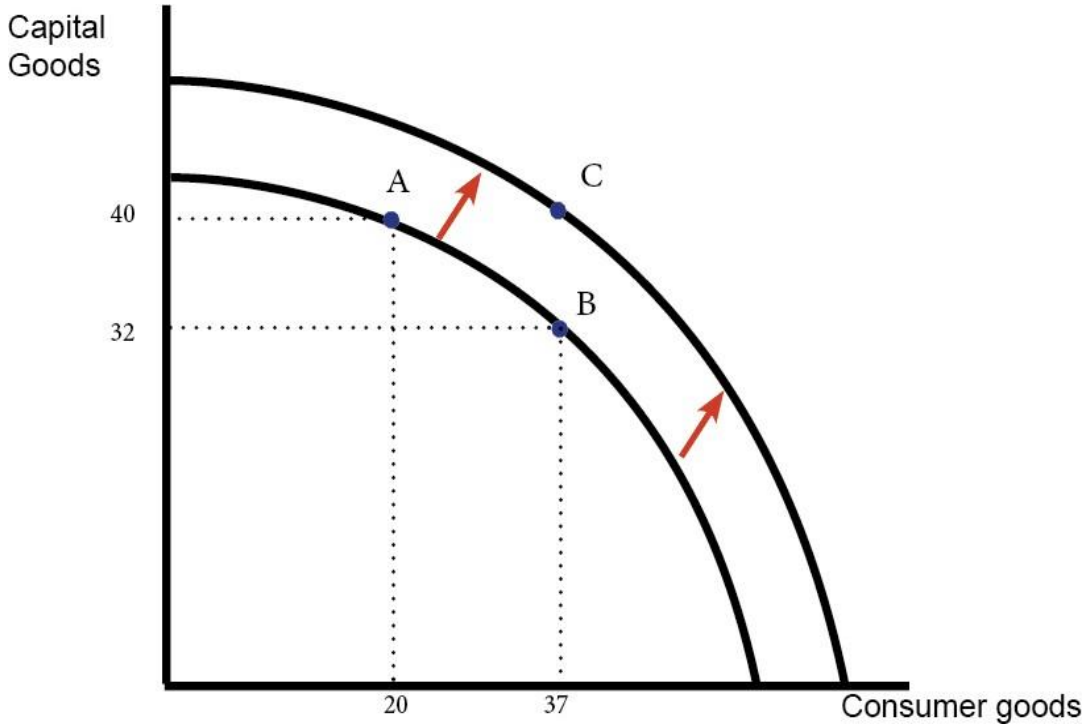
- Discovering more raw materials (e.g. discovering oil fields)
- Increase in the size of work force (e.g. immigration)
- Increase in capital stock (e.g. investment in new machines, factories)
- Increase in labour productivity (e.g. due to better educated workers or workers becoming more motivated)
- Improvements in technology which increases labour productivity

Negative economic growth

It is also possible for the PPF curve to shift inwards. This could occur due to:

- Declining population
- Firms closing down and stopping production

Choice between consumer and capital goods



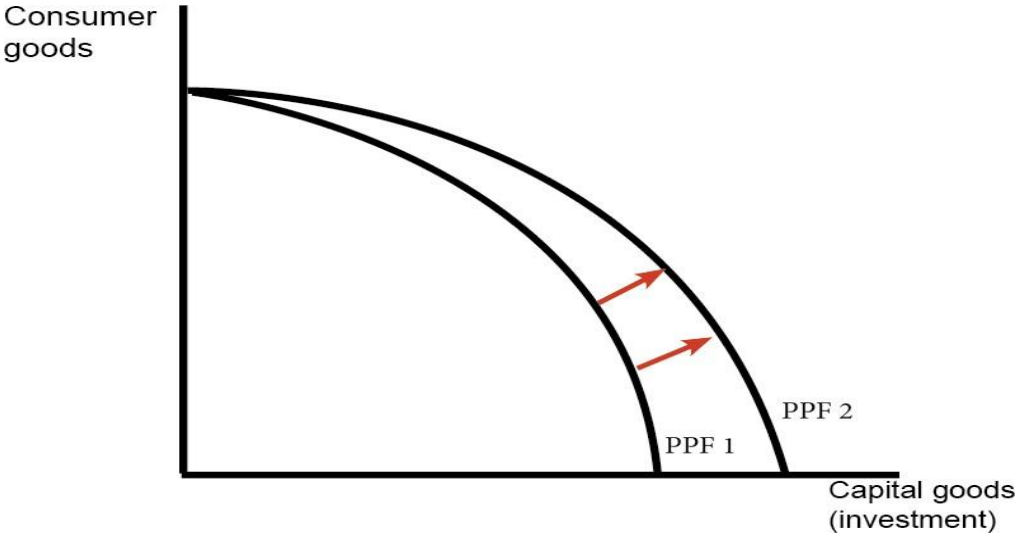
- **Consumer goods**. Goods that we can use and enjoy. The things we buy in shops like food, clothes, etc.
- **Capital goods**. These are goods that are used in the productive process – for example, a machine. Capital goods involve investment in increasing productive capacity.

    - If we move from B to A, there is a movement along the PPF curve enabling more capital goods to be produced (an extra 8). The opportunity cost is that there are less consumer goods (17 less).
    - Increasing capital goods leads to lower living standards in the short term, but in the long term we may be able to produce more because of the investment in machines and factories, which enables higher output.

Short term growth or long-term investment

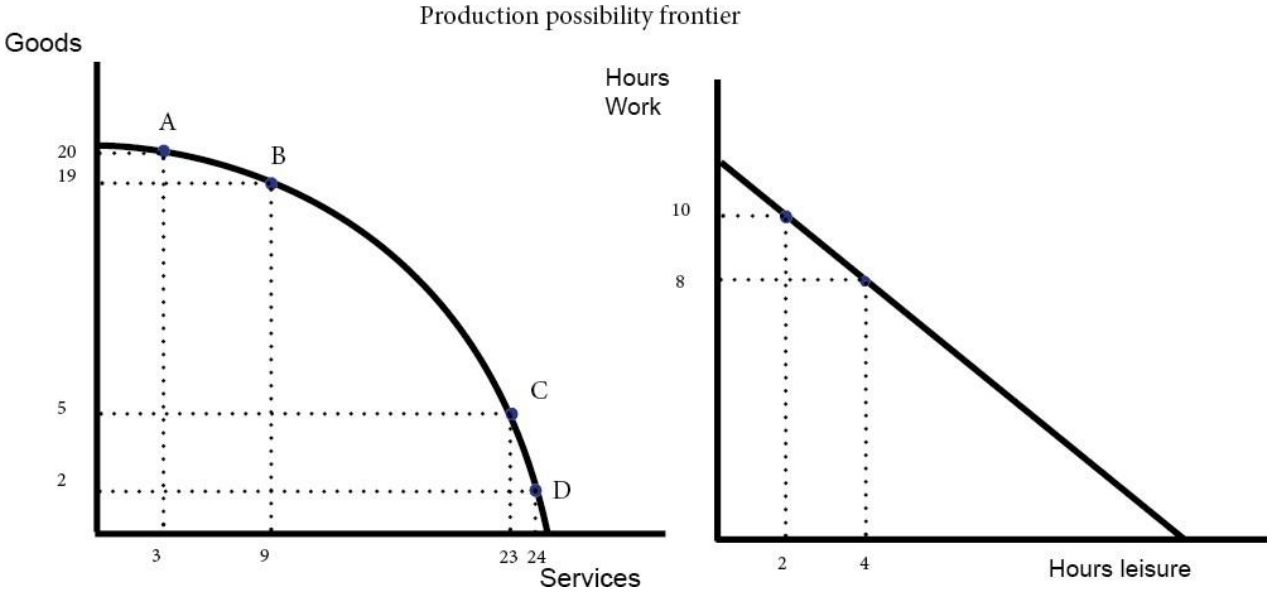
- Devoting a higher proportion of resources to current consumption has an opportunity cost of less investment and less growth in the long run.
- Devoting a higher proportion of resources to capital investment has an opportunity cost of less consumption in the short run.
- There is a strong link between a PPF and the long run aggregate supply curve (LRAS). LRAS is a major determinant of economic growth (see: unit 2 macro-economics).

Rotation in PPF Curve



- In this PPF curve, we see a shift to the right of the PPF curve on the x-axis.
- In this case, we see an improvement in technology relating to capital goods, but not consumer goods. Therefore, we can produce more capital goods relative to consumer goods.
- If the economy is becoming more skewed towards capital goods. It may enable higher growth in the long-term because of increased investment.

Diminishing returns vs constant returns



- The PPF on the left is concave to the origin. This is because of imperfect substitution, and diminishing returns to increasing goods / services.
- If we move from A to B, we gain 6 services, and the opportunity cost is only 1 good.
- But, if we move from C to D, we gain only 1 service and lose 3 goods. Therefore, the opportunity cost of producing more services is increasing.
- A PPF curve can be straight (diagram right) if there are constant returns.

Money

- Money is an object used as a medium of exchange between two parties. It can have intrinsic value like gold or it can be in the form of notes and coins distributed by a central bank.
- Money enables people to specialise in one job and use their earnings to purchase goods and services from people who work elsewhere. For example, a teacher gets paid money and can buy food from supermarkets.
- Without money, we would need a barter economy, which makes specialisation harder (e.g. a pig farmer is unlikely to sell me some pork in return for a few hours of economics tuition).

Functions of money

1. **Medium of exchange.** Money should be accepted universally for the payment of goods and debt.
2. **Unit of account.** Money measures the relative worth of goods (e.g. a TV priced at £250, a banana at 25p).
3. **Store of value.** If you save money in the bank, you can keep part of your income to spend in the future (inflation means cash tends to reduce value over a period of time).
4. **Standard of deferred payment.** Money is used to pay back debt. This is related to it being a unit of account.

Types of money

- **Cash** – This is notes and coins that people have to spend
- **Bank deposits**. Bank deposits in current accounts can be readily accessed and spent. For example, people can purchase goods on debit card. The firm is paid by an electronic transaction.
- **Cheques**. Where a firm can present a cheque to be honoured by issuing bank. Rapidly falling out of use due to higher costs than debit cards.
- **Near money**. This is a term to describe assets that can easily be converted into cash to be spent. For example, if you have short-term government gilts, these can easily be sold on the gilt market – so we call it near money. A house, by contrast, takes a long time.
- **Liquidity**. This is a term to describe how easily assets can be turned into effective money. For example, if you are illiquid, it means your wealth is tied up in assets, which are hard to convert to cash.

Classification of goods and services

Economic goods / free goods

- **Economic good / private good** – A good which imposes some cost on society to produce. It is a good that is limited and will have an opportunity cost.
- **Free good** – A good which can be enjoyed without any cost to society. It is a good that is unlimited and has no opportunity cost. For example, air to breathe, rain water (in most parts of the world).

Example of free good vs economic good

- If you get a meal that costs £0, that doesn't make it a free good. In this case, you got the meal for free, but it was still a cost to someone else in society. To grow the food, we used up limited farming land. It is an economic good.
- However, if you go swimming in the sea, this can be considered a free good, as there is no cost.

Public good

A public good, by contrast, has two characteristics:

- **Non-rivalry**. When a good is consumed, it doesn't reduce the amount available for others, e.g. street lighting.
- **Non- excludability.** This occurs when it is not possible to provide a good without it being possible for others to enjoy, e.g. national defence.

Public goods suffer from the **free-rider problem**.

- The free rider problem means that people can enjoy the goods without paying for it. Therefore, there is no incentive for firms to provide goods because it is difficult to charge consumers for using it.
- The consumer can enjoy it for free.
- Public goods usually require the government to provide the good directly and pay for it out of general taxation.

Merit good

A merit good occurs where people may underestimate or be unaware of the benefits of consuming a good.

- For example, students may underestimate the benefits of studying and therefore leave school early.
- Merit goods often have a positive externality as well.
- Merit goods are under-consumed in a free market.

Demerit good

A demerit good occurs where people under-estimate or ignore the costs of consuming a good.

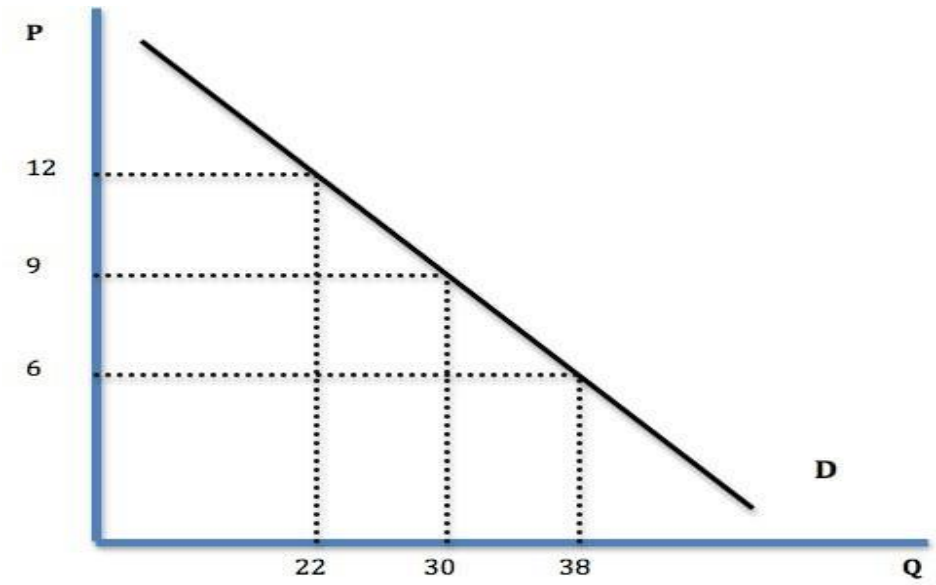
- For example, people may not be aware of the dangers of smoking – or they may be aware, but choose to ignore them.
- Demerit goods often have negative externalities as well (e.g. passive smoking effect to others).
- Demerit goods are over-consumed in a free market.

Demand

- The individual demand curve illustrates the price people are willing to pay for a particular quantity of a good.
- The market demand curve illustrates the price consumers in the whole economy are willing to pay.
- Effective demand refers to the amount of goods that consumers are actually able to buy. It is just a wish to purchase goods at that price, but the consumer has the income to buy.

Movement along the demand curve A change in price causes a **movement along** the demand curve.

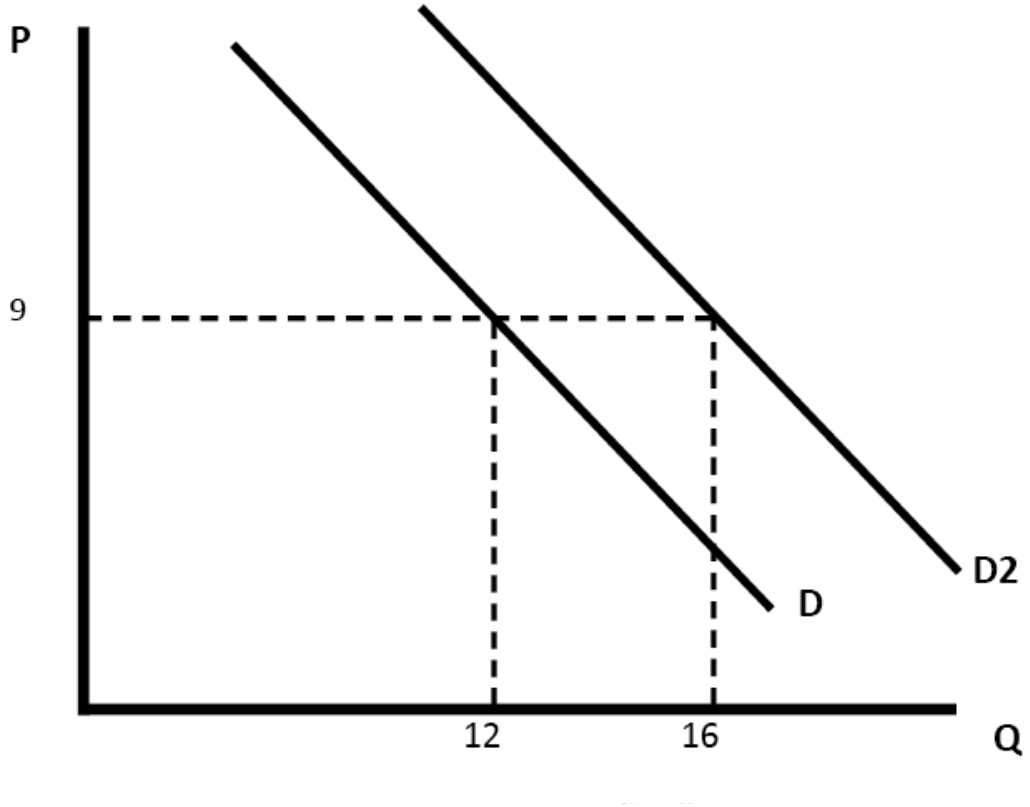
- A higher price reduces demand.
- A lower price increases demand.



- For example, if there is an increase in price from 9 to 12, then there will be a fall in demand from 30 to 22.
- As the price falls, people are usually willing to buy more of the good. If the price is higher, this discourages people from buying the good.

Shifts in the demand curve

This occurs when, even at the same price, consumers are willing to buy a higher quantity of goods – for example, demand shifts from D to D2



A shift to the right in the demand curve can occur for a number of reasons:

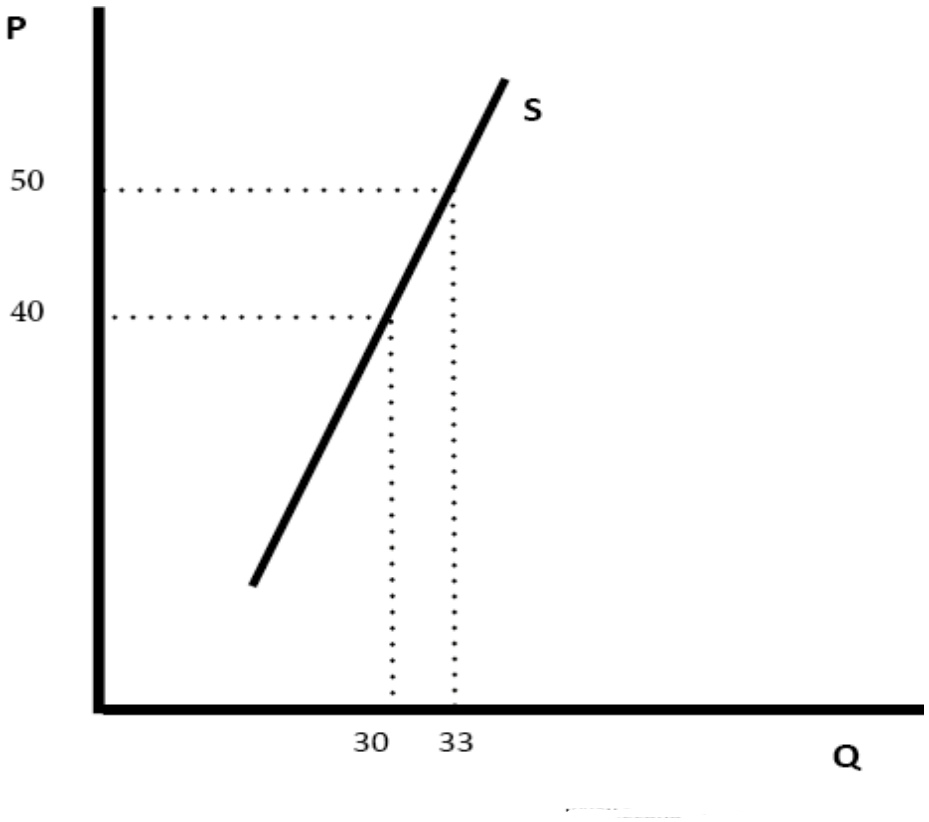
1. An increase in disposable income, such as higher wages and lower taxes giving consumers more spending power.
2. An increase in the quality of the good. For example, mobile phones are now more versatile and powerful, making them more attractive.
3. Advertising can increase brand loyalty to goods and increase demand.
4. An increase in the price of substitutes. For example, if the price of O2 Mobile phone calls goes up, the demand for Vodafone mobiles will increase.
5. A fall in the price of complements. For example, a lower price for Apple apps will increase demand for Apple iPhones.

Evaluation

- It depends on the type of good. A rise in income will not have any effect on demand for salt, but it will have a bigger effect on demand for luxury cars.
- Some goods will vary due to seasonal factors like the weather and time of year (e.g. scarves and air conditioners).

Supply

The supply curve refers to the quantity of a good that the producer plans to sell in the market.



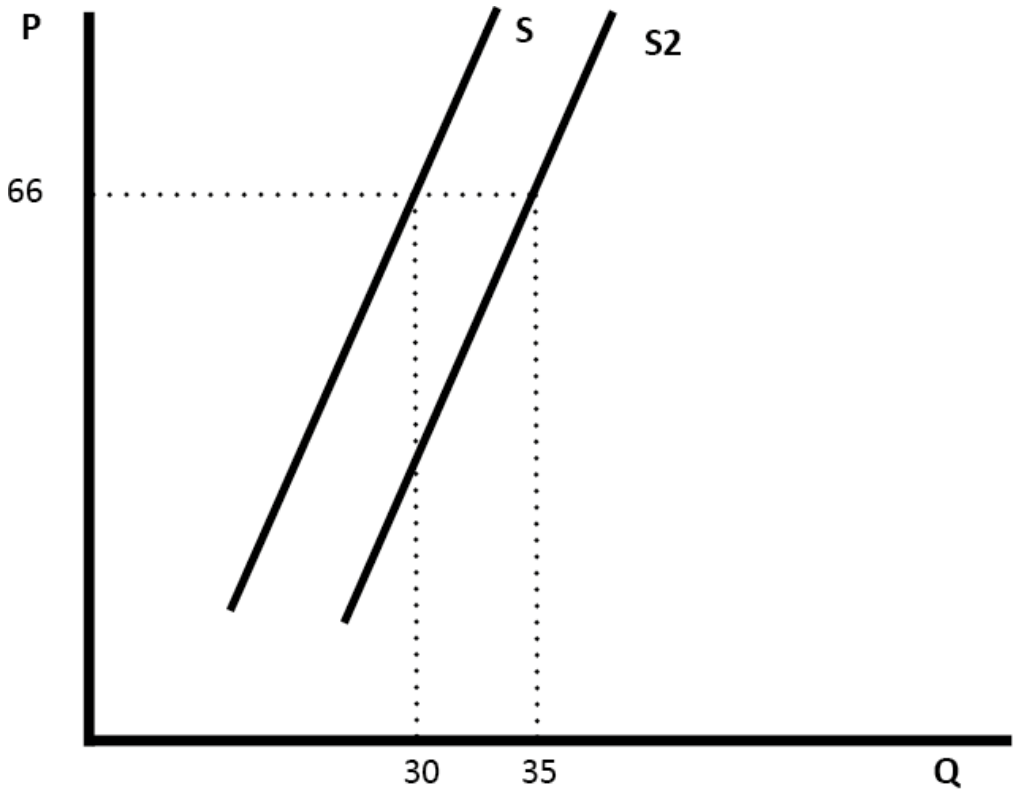
Change in price and movement along supply curve

- If price changes, there is a **movement along** the supply curve.
- For example, an increase in the price from £40 to £50 causes an increase from 30 to 33.

Why supply curve slopes upwards

- As price increases, firms have an incentive to supply more because at a higher price, they get extra revenue (income) from selling the goods.
- Also, as output rises, firms usually have higher marginal costs in the short run; it is more costly to increase output. Therefore, firms require higher prices to encourage more supply.

Shifts in the supply curve



An increase in supply occurs when more is supplied at each price, e.g. a shift in supply from S to S2. This could occur for the following reasons:

- A decrease in costs of production. This means that business can supply more at each price. Lower costs could be due to lower wages or lower raw material costs.
- An increase in the number of producers will cause an increase in supply.
- Expansion in the capacity of existing firms, e.g. investment to extend the size of a factory.
- An increase in the supply of a complementary good, e.g. beef and leather.
- Favourable climatic conditions, which are very important for agricultural products, e.g. good weather will give a good harvest.
- Improvements in technology, e.g. computers and the internet enables more to be produced for a lower cost.
- Lower taxes on the good, e.g. lower petrol tax.
- Government subsidies on the good (government paying part of the cost).

Joint supply

- Joint supply occurs when two goods are supplied together from the same source.

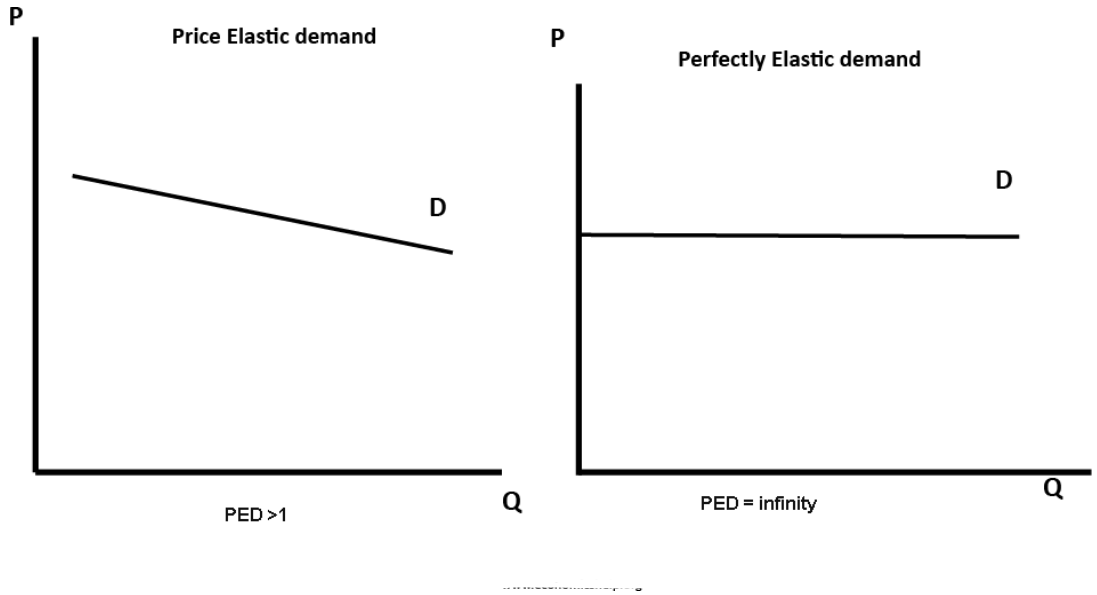
Elasticity

The price elasticity of demand measures the responsiveness of demand to a change in price.

$$\text{Price Elasticity of Demand (PED)} = \frac{\%\text{ change in Q.D.}}{\%\text{ change in Price}}$$

Price elastic demand

- Demand is price elastic if a change in price causes a bigger percentage change in demand.



Example of elastic demand

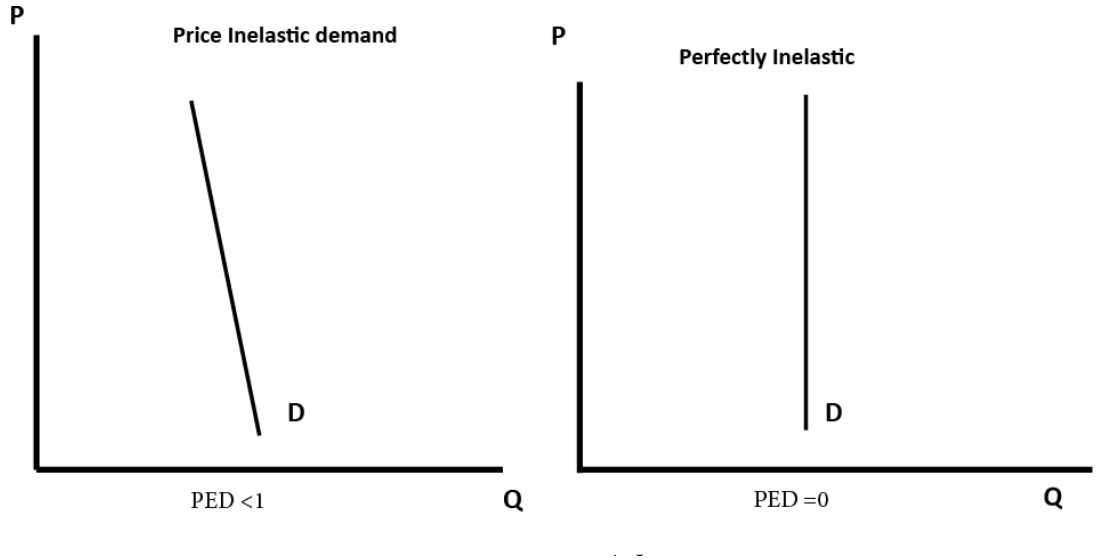
- If the price of Tesco bread increases 5% and demand falls 15%, the PED is $(-15/5) = -3.0$. This is price elastic.

Characteristics of elastic demand

- **Luxury goods** are sensitive to price because they represent a big percentage of disposable income, such as sports cars and foreign holidays.
- **Competitive markets**. Goods that have many substitutes and a very competitive market will be elastic --- for example, if the price of Tesco bread increased, consumers could switch to several other varieties.
- **Frequently bought**. With goods that are bought frequently, we are more likely to compare prices, and switch if necessary.

Inelastic demand

- Demand is price is inelastic if a change in price leads to a smaller percentage change in Q.D.
- PED will be less than -1 (e.g. -0.5)



Example of inelastic demand

- If the price of tobacco increases 10% and demand falls 2%, the PED = -0.2

Characteristics of inelastic goods

- **Few substitutes.** e.g. petrol and cigarettes have few close alternatives.
- **Necessities**, e.g. if you have to drive to work, you need to buy petrol.
- **Addictive**. If you are addicted you will pay higher price e.g. cigarettes, coffee.
- **Small percentage of income** – means you don't worry if price rises.
- **In the short term**, demand is usually more inelastic because it takes time for consumers to find and switch to alternatives.

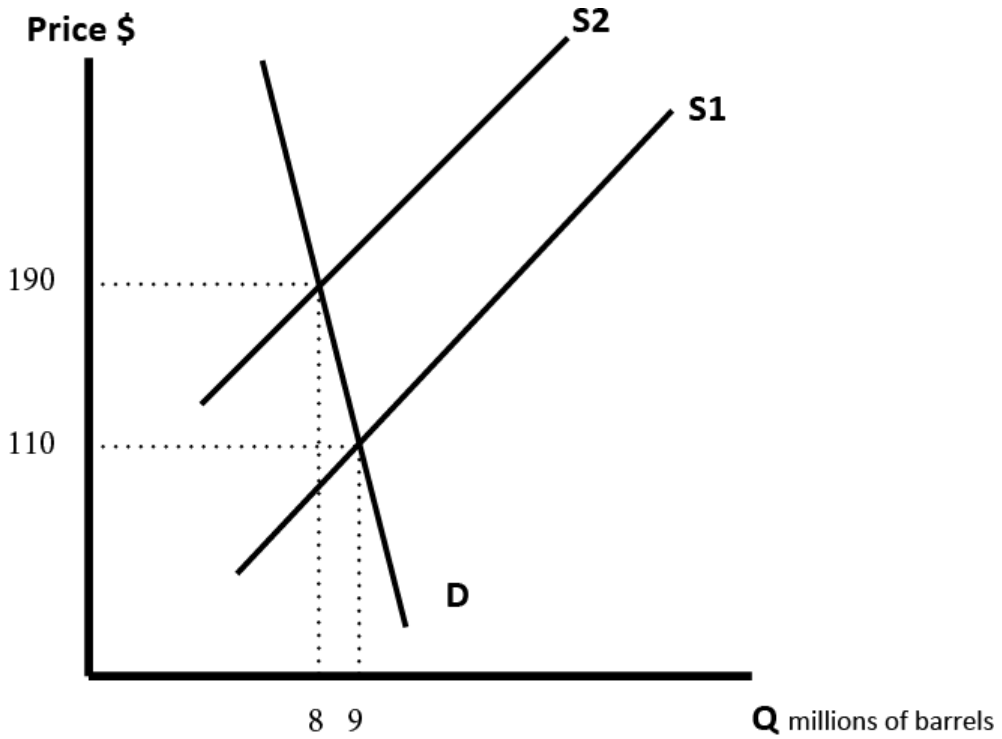
Evaluation

1. Demand for a good like coffee is likely to be inelastic, as there are few substitutes to coffee. But demand for individual brands of coffee is likely to be more elastic, as there are substitutes to Starbucks coffee (e.g. Costa).
2. Elasticity may change over time. In the short term, demand for petrol is inelastic, but over time, people may be more willing to switch to alternatives, such as cycling to work, so that demand for petrol becomes more elastic with time.

Using knowledge of elasticity

1. Revenue and elasticity

If demand is inelastic then increasing the price can lead to an increase in revenue.



In this example, the price of oil rises from $110 a barrel to $190, and the quantity falls from 9 million to 8 million.

- Revenue was $110 × 9 = $990 million
- Revenue is now $190 × 8 = $1,520 million
- An **increase** in revenue of $530 million

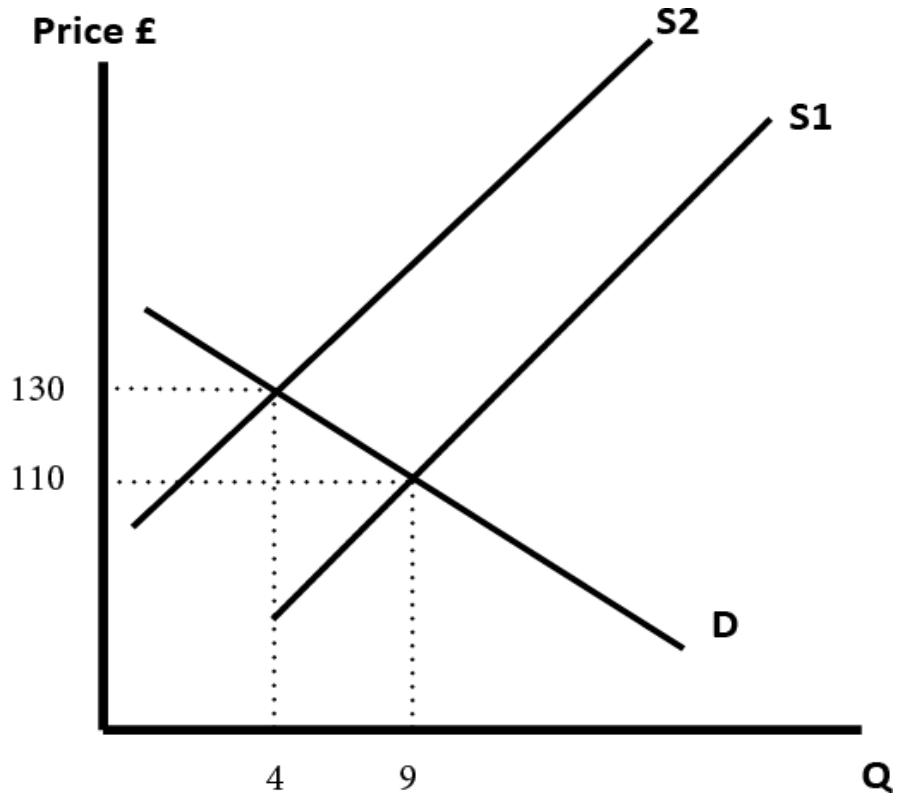
This is why OPEC tries to increase the price of oil, because higher oil prices are more profitable.

What is the PED of oil in this example?

- % change in Q.D 1/9 = ---0.11 (---11.1%)
- % change in price 80/110 = 0.727 (72.7%)

Therefore, PED of oil = ---11.1 / 72.7 **= ---0.15 (inelastic)**

If demand was price elastic



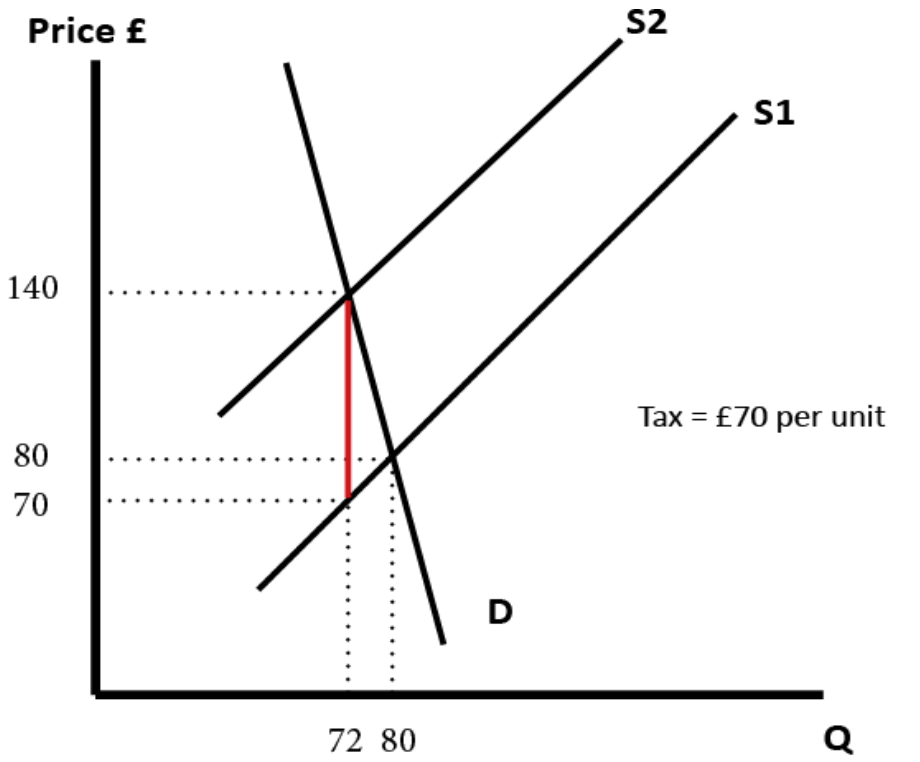
- Price rises from £110 to £130 – (20/110) = 18%
- Quantity falls from 9 to 4 (5/9) = 55.5%
- Revenue was 110 × 9 = £990
- Revenue has now fallen to 4 × £130 = £520
- A fall of £470

PED of this example ---55/18 = --- **3.05 (elastic demand)**

2. Advertising and elasticity

- Firms have an advantage if demand for their good is price inelastic. If demand is inelastic they can increase price and make more profit.
- This is why many firms spend money on advertising to create brand loyalty.
- Because of strong brand loyalty, Coca Cola can charge a higher price than other brands like Sainsbury Cola.
- Firms can make demand more inelastic by offering more add---on features and better quality products that stand out from the competition.

The impact of elasticity on tax



- In this example, the tax is £70 per unit.
- After tax is placed on the good, supply shifts to S2.
- Demand falls from 80 to 72. The price rises from £80 to £140.
- The total tax revenue equals 72 ×£70 = £5,040

Consumer burden of tax

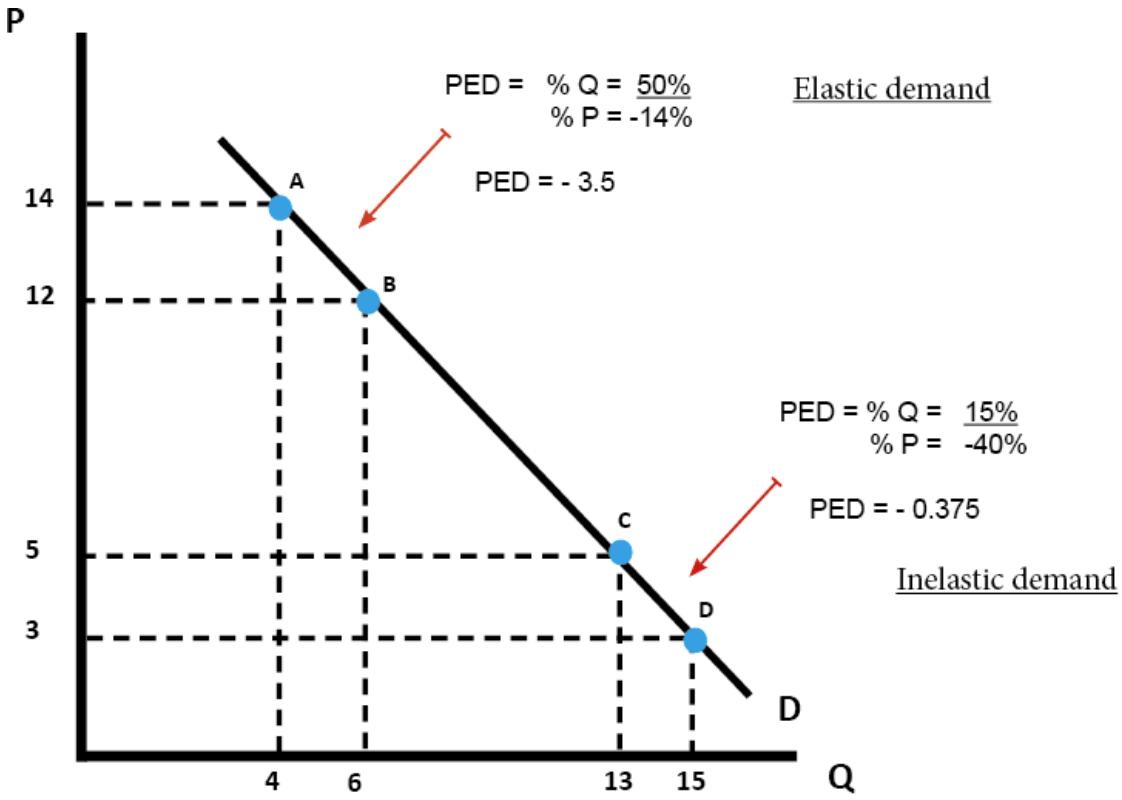
- The tax is £70, and consumers end up paying an extra £60.
- In this case, consumers face most of the tax burden.
- Consumer burden = (60 × 72) = £4,320

Producer burden

- Producers get £10 less after the tax.
- Therefore, producer burden is (10 × 72) = £720.

Elasticity of a demand curve

With a straight line demand curve the elasticity of demand varies.



Between point A and B, demand is elastic. (---3.5)

- This is because the % change in quantity (4 to 6) is 2/4 = 50%
- The % change in price (14 to 12) = ---2/14 = ---14%

Between points C and D, demand becomes inelastic. (---0.375)

- The % change in quantity 13 to 15 is just 2/13) = 15%
- The % change in price is greater 2/5 = 40%

With a straight line demand curve, the elasticity is always changing.

- Demand is more elastic when Q is close to zero.
- As price falls closer to 0, demand becomes more inelastic.
- PED = 1 when the % change in demand is the same as % change in price (somewhere in middle of demand curve)

Income elasticity of demand (YED)

Income elasticity measures the responsiveness of demand to a change in income.

$$\text{Income Elasticity of Demand (YED)} = \frac{\%\ \text{change in Q.D.}}{\%\ \text{change in income}}$$

For example, if average income increases by 5% and the demand for mobile phones increases by 20%, and demand for Tesco value rice falls 2%.

- Then the YED for mobile phones = 20 / 5 = **4.0** (luxury good)
- The YED for Tesco value rice ---2/5 = **---0.4** (inferior good)

Types of good

- **Inferior good.** This occurs when an increase in income leads to a fall in demand. Inferior goods will have a negative YED. Examples include clothes from charity shops and Tesco value rice. As your income increases, you buy better quality goods instead.
- **Normal good**. This occurs when an increase in income leads to an increase in demand for the good, therefore YED>0. Most goods are normal goods.
- **Luxury good.** This occurs when an increase in income causes a bigger percentage increase in demand, therefore YED >1. It means demand is income elastic. Examples include jewellery and sports cars.
- **Income inelastic**. This means an increase in income leads to a smaller percentage increase in demand. Therefore 0 > YED < 1.

Importance of income elasticity of demand

- In a recession, with falling incomes, demand for luxury goods will fall significantly. Demand for inferior goods will increase.
- Budget pound shops may do well with falling incomes, but luxury car sales will not.
- Supermarkets may respond to a recession (falling income) by supplying more 'inferior' goods and cutting back on luxury goods.
- If incomes are rising, firms may seek to make their good more of a luxury good, e.g. car manufacturers may add more luxury items to cars, such as air conditioning to take advantage of the rising incomes.

Cross elasticity of demand

Cross elasticity of demand measures how the demand for one good is affected by the price of another.

$$\text{Cross Elasticity of Demand (XED)} = \frac{\%\text{ change in Q.D. good A}}{\%\text{ change in Price good B}}$$

- For example, if the price of milk falls by 10%, demand for tea may increase 1%. Therefore XED = (1/-10) = **-0.1**

Substitute goods. These are two goods that could be used as alternatives. With two substitute goods, XED will be positive.

- Weak substitutes like tea and coffee will have a low XED.
- Tesco bread and Sainsburys bread are close substitutes so XED is higher.

Complements goods. These are goods that are used together. Therefore XED is negative.

- For example, if the price of DVD players fall, then there will be an increase in demand for DVD discs.

Unrelated goods. If the price of lamb increases, we would expect it to have no effect on the demand for beer or computers. If the price of lamb increases and demand changes for computers, it is just a co-incidence and not related.

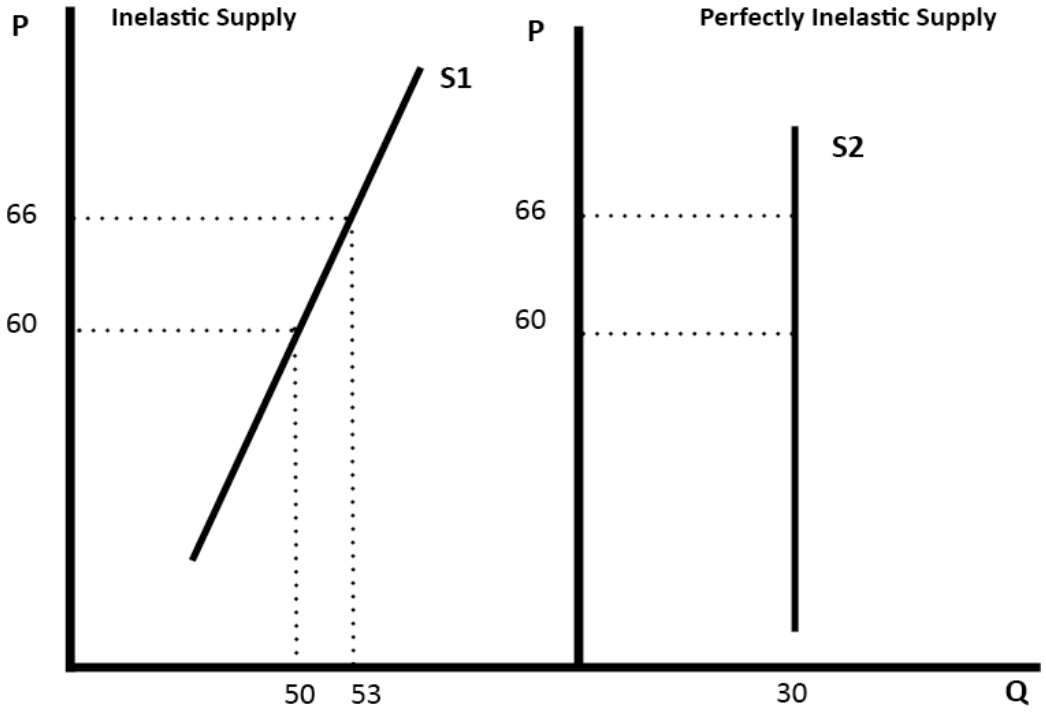
Price elasticity of supply

This measures the % change in quantity supplied after a change in price.

$$\text{Price Elasticity of Supply (PES)} = \frac{\%\text{ change in Q.S.}}{\%\text{ change in Price}}$$

- If the price of cars increase 10%, and supply increases 5%,
  - The PES = 5/10 = 0.5
- If the price of tomatoes increase 10% and supply increases only 1% in the short term,
  - The PES = 1/10 = 0.1

Inelastic supply



- Inelastic supply means a change in price causes a smaller percentage change in supply (PES <1).
- Perfectly inelastic means a change in price has no effect on supply.
- In the example on the left: % change in Q = 3/50 = 6%
- % change in price = 6/60 = 10%
- Therefore, PES = 6/10 = **0.6** (inelastic supply)

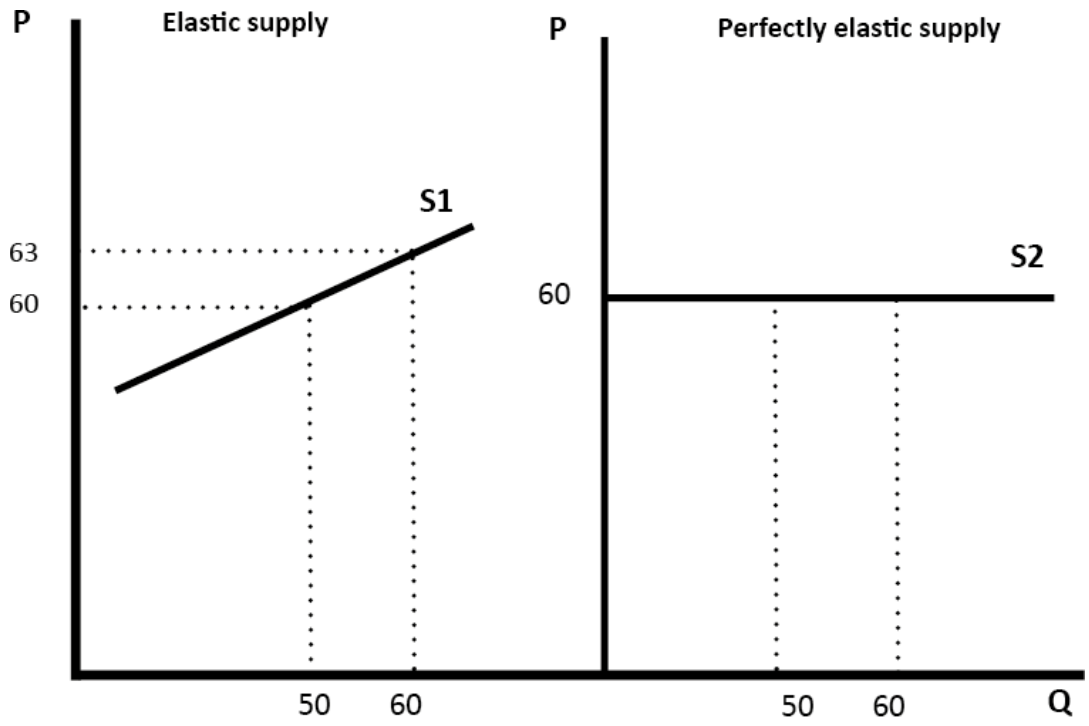
Supply could be inelastic for the following reasons:

1. **Operating close to full capacity**. If firms are operating close to full capacity, it is difficult to increase supply.
2. **Low levels of stocks**; therefore, there are no surplus goods to sell.
3. **In the short term**, capital is fixed, therefore firms do not have time to build a bigger factory and increase supply.
4. **Difficult to employ factors of production**, e.g. it may be difficult to find relevant skilled labour to increase output.
5. **With agricultural products**, supply is inelastic in the short run because it takes at least 6 months to grow crops.

Elastic supply

This occurs when an increase in price leads to a bigger % increase in supply, therefore PES >1.

- Perfectly elastic supply means that at a given price, supply is unlimited.



- On the left: Price increase from 60 to 63 and Q increases from 50 to 60.
- % change in Q = 10/50 = 20%
- % change in price = 3/60 = 5%
- Therefore PES = 20/5 = **4.0** (elastic supply)

Supply could be elastic for the following reasons:

- If there is spare capacity in the factory.
- If there are stocks available.
- If it is easy to employ more factors of production.

Difference between long run and short run

- In the short run, supply is more likely to be inelastic because the firm does not have the ability to increase the size of the factory.
- But, in the long run, supply can be more elastic as the firm is able to invest in more capacity and therefore increase supply.

Elasticity calculation

Suppose PES for computers is 2.0. When the price was £30, the firm supplied 4,000. If the price increased from £30 to £36, what will be the new Q?

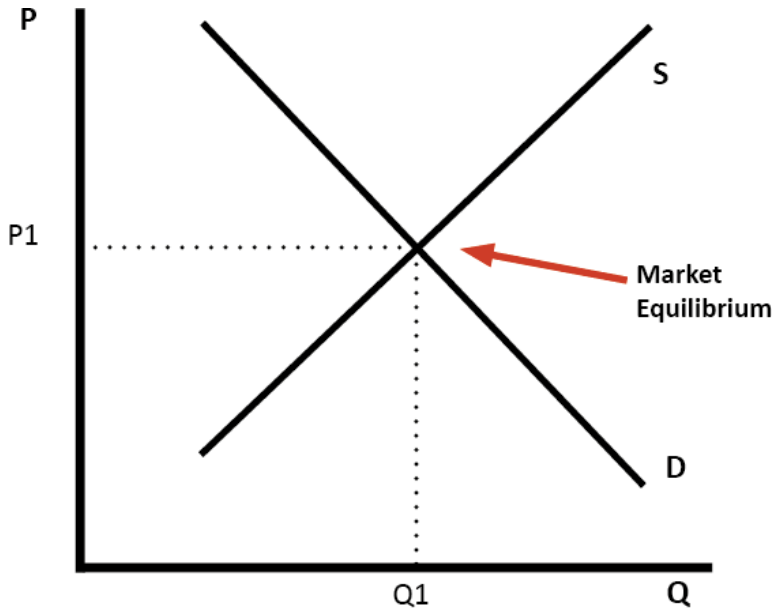
- Price increases by £6. Therefore as a %, (6/30 =0.2) = 20%

(PES) 2.0 = $\frac{\%\text{ change in QS}}{20\ (\%\text{ change in P})}$

- Therefore 40 = % change in QS
- Therefore new Q = 4000 *140/100 **= 5,600**

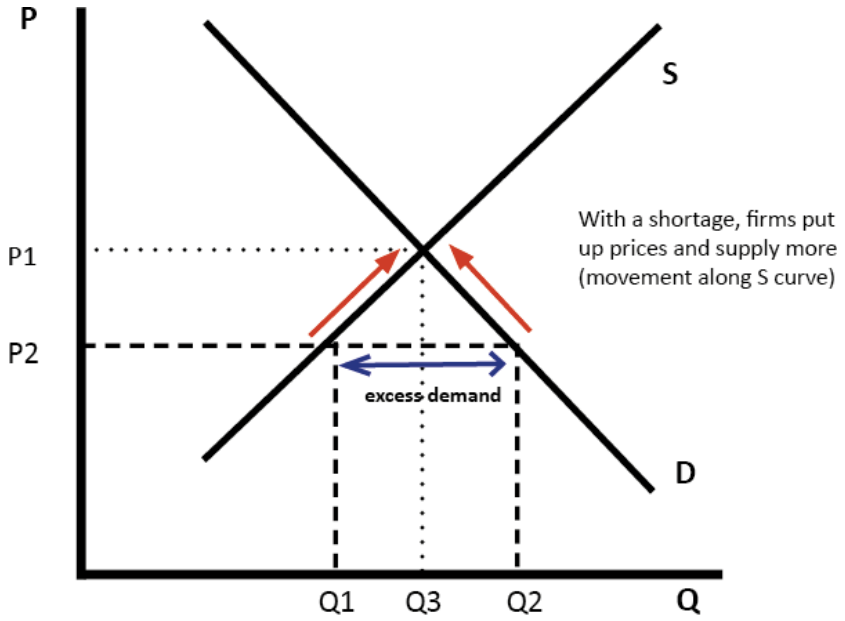
Market equilibrium - - - demand and supply

The price mechanism refers to how supply and demand interact to set the market price and the amount of goods sold.



Market equilibrium occurs when supply = demand and there is no tendency for the price to change.

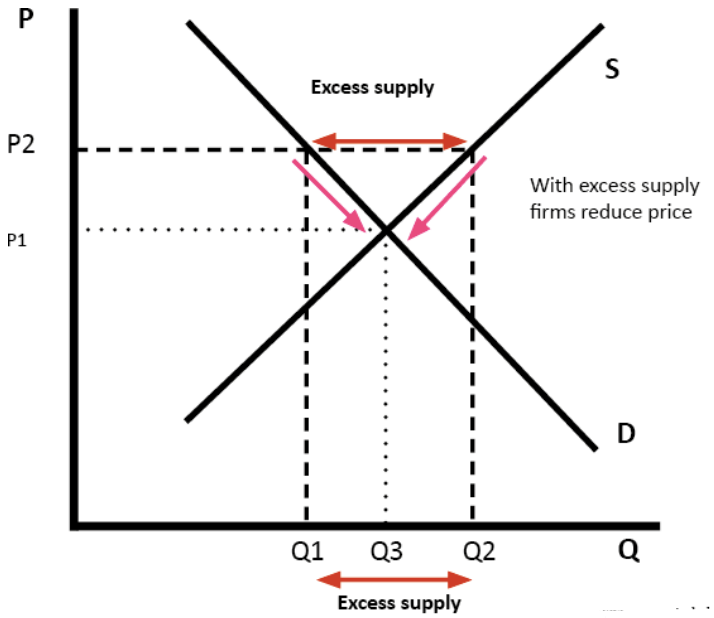
Excess demand



If the price is below equilibrium (p2), demand is greater than supply (Q2 – Q1) – causing a **shortage.**

- Therefore, with consumers wanting to buy more firms will put up prices and supply more.
- As price rises, there will be movement along the demand curve and less will be demanded.
- Prices will rise until supply equals demand.

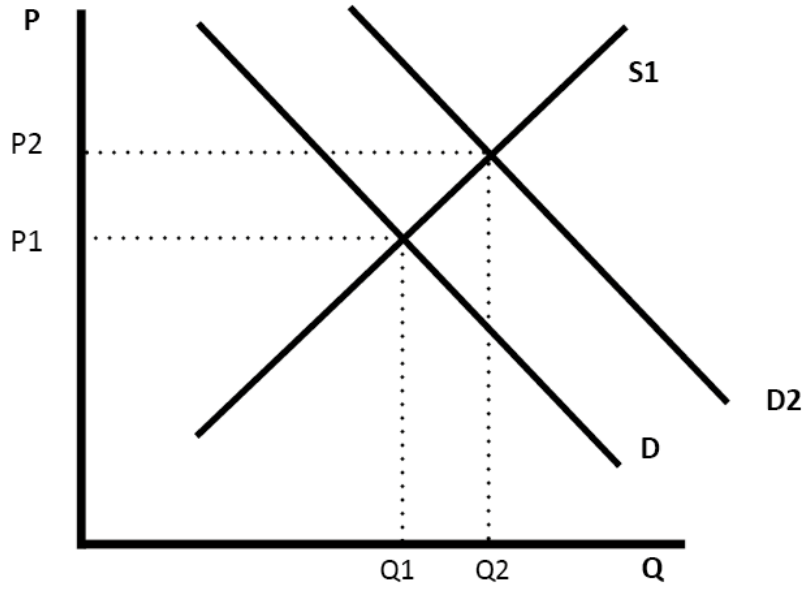
Excess supply



- If the price is above equilibrium (p2), supply is greater than demand (Q2---Q1) – causing a **surplus**.
- To sell the unsold goods, firms reduce the price and reduce supply (movement along supply curve). The lower price also encourages more demand.
- The price falls to P1 where supply equals demand.

Impact of increase in demand

- If consumers saw an increase in income, we would see an increase in demand for goods like TV's; the demand curve would shift to the right.
- Initially there would be a shortage, but the higher demand would cause the price to rise and suppliers to supply more.



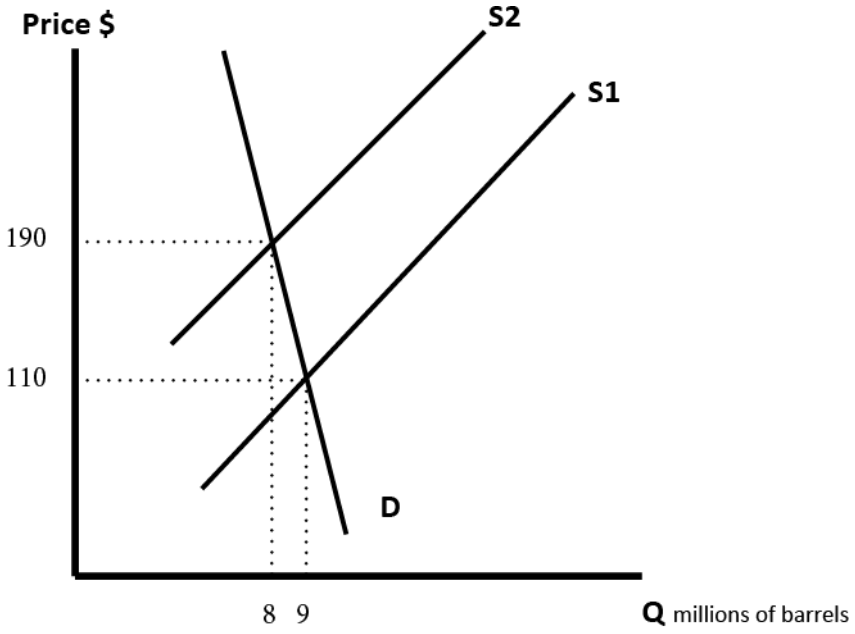
The increase in demand causes an increase in price (P1 to P2) and an increase in quantity (Q1 to Q2).

In the long---term, the higher prices may encourage more firms to enter the market and the supply curve will shift to the right.

This is why growing demand for a product (e.g. mobile phones) could be consistent with falling prices.

Fall in supply

If the availability of oil decreased, we would see a fall in supply.



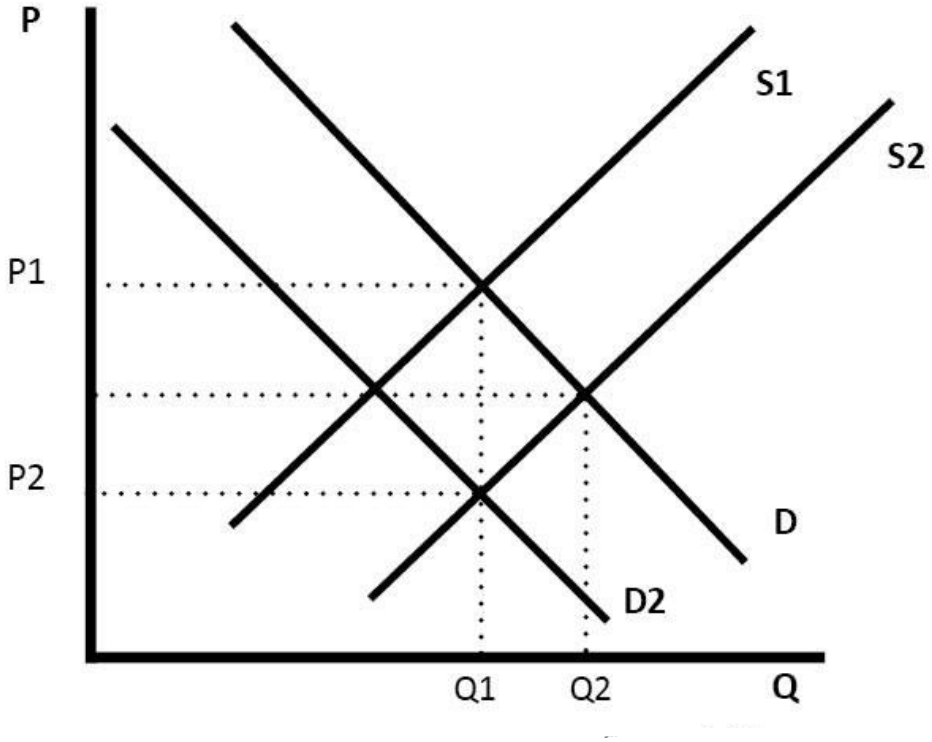
The fall in the supply of oil causes the price to rise and a small fall in demand. Since demand for oil is inelastic, we see a relatively bigger increase in the price.

Impact of fall in supply in long term

- If the price of oil increased, it may start to make it profitable to produce oil from new places, such as Alaska and Antarctic. Previously it was too costly to produce oil from here, but the higher price may make it worthwhile.
- If the price of oil rises, in the long-term people may respond to higher prices by switching to other forms of transport which don't use petrol.
- In other words, higher prices act as a signal and this can affect the market in the long-term.

Factors that could explain a fall in the price of a good

- The price of a good, such as coffee, would decrease if there was a fall in demand and/or an increase in supply.



Fall in the price from P1 to P2

The demand for coffee could fall for various reasons such as:

- Lower incomes mean that consumers cannot afford to buy as much.
- Coffee becomes less fashionable.
  A fall in number of coffee shops.
- Health concerns about caffeine.

The supply of coffee could increase for various reasons such as:

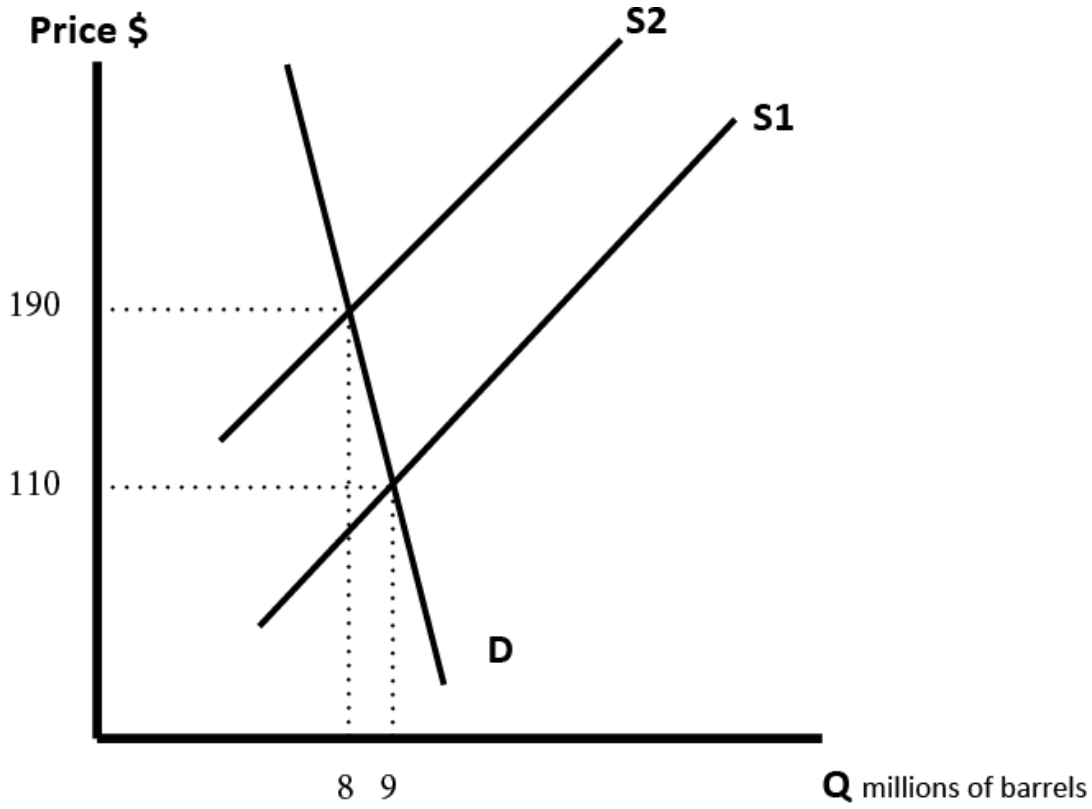
- An increase in the number of suppliers or countries producing coffee.
- Lower costs of production, e.g. lower wage rates in coffee-producing countries.
- Government subsidies, e.g. Latin American countries may wish to subsidies the coffee farmers.
- Higher labour productivity in producing coffee, which will decrease the costs of production.

How resources are allocated in a free market

In a free market, prices and profit act as signals to agents. This influences the allocation of resources.

Rationing effect

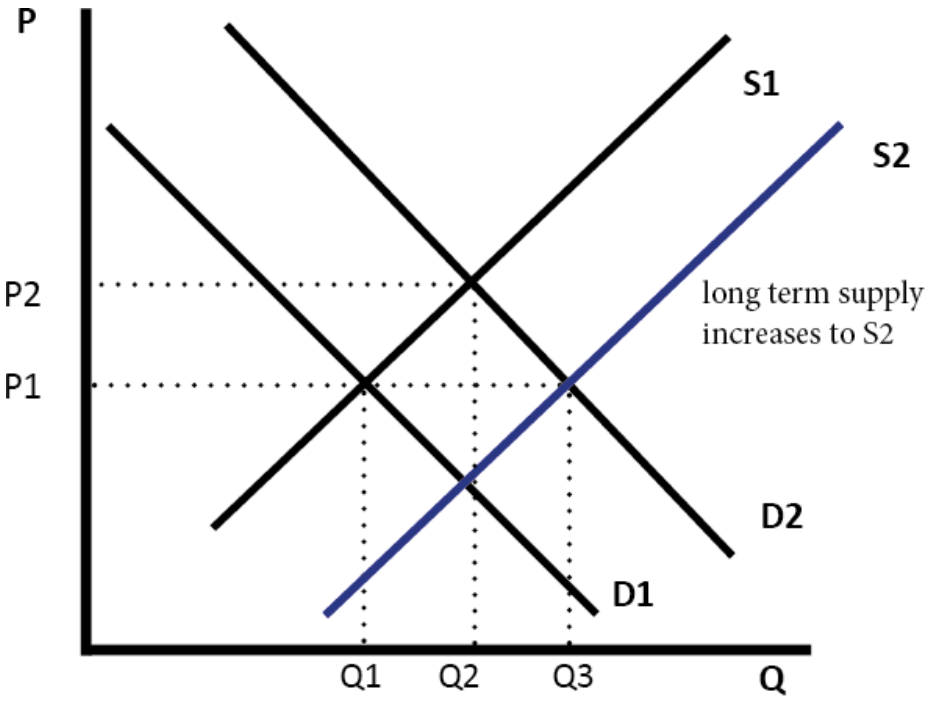
- If there is a shortage of the good, the price will tend to increase.
- The higher price causes movement along the demand curve. Less is demanded at the higher price. This helps to ration the scarce demand.



Higher price acts as a disincentive to buy, rationing demand.

Incentive effect

- If there was increased demand for a new good (like phone apps), this would push up the price.
- This higher price makes the good more profitable. Therefore, in the long run, it acts as an incentive for producers to increase production.



- In the long term, firms respond to higher prices (and more profit) by increasing supply.
- This is an example of how markets can respond to changing conditions.
- For example, the rising demand for mobile phones has led to significant increase in supply.

Signalling

The price mechanism can provide a signal to firms and consumers.

- If we see higher demand, prices will rise and this creates a signal to producers that there is high demand.
- A high wage for certain types of work can signal to workers that firms need to fill these jobs.

Inter-related markets

Derived demand. This occurs when the demand for a good depends on demand for another product / service.

- For example, the demand for trains depends on the demand for getting to work. If there was a rise in unemployment and less people working, demand for travel would fall.

Composite demand. This occurs when a good has multiple different uses. Rising demand for one use rations the availability for use of any other purpose.

- For example, demand for wheat could be due to the use of wheat in either bread or as a biofuel.

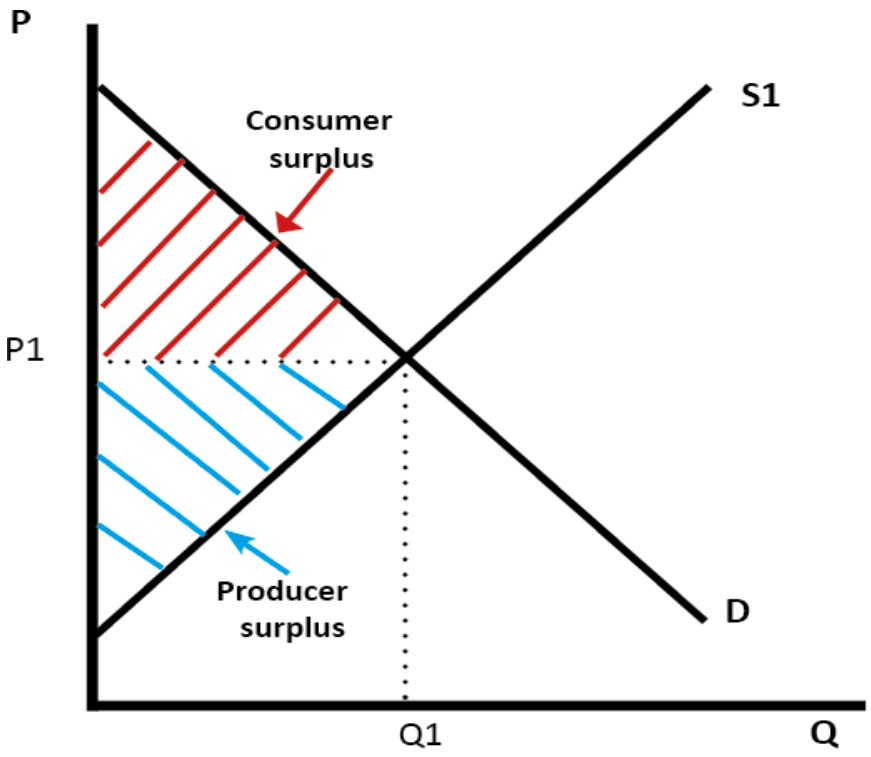
- If there is higher demand to use wheat as a biofuel, this will affect the price of bread. With more demand for biofuels, the price of wheat will rise causing the price of wheat for bread to also increase.
- Other examples of composite demand include:
  - Land --- used for either offices or for building houses.
  - Steel --- could be used for building guns or it could be used for building bicycles.

Joint demand. This occurs when two goods are complementary and needed together.

- For example, if you buy a printer, you need to buy printing ink too.
- Therefore, higher demand for home printers will lead to higher demand for ink cartridges. Other examples of joint demand include:
  - iPhone and iPhone Apps
  - Camera and memory stick

Consumer surplus

- Consumer surplus is the difference between the price that consumers pay and the price that they would be willing to pay.
- For example, if a book costs £10, but the demand curve shows that they would have paid £16, the consumer surplus is £6.

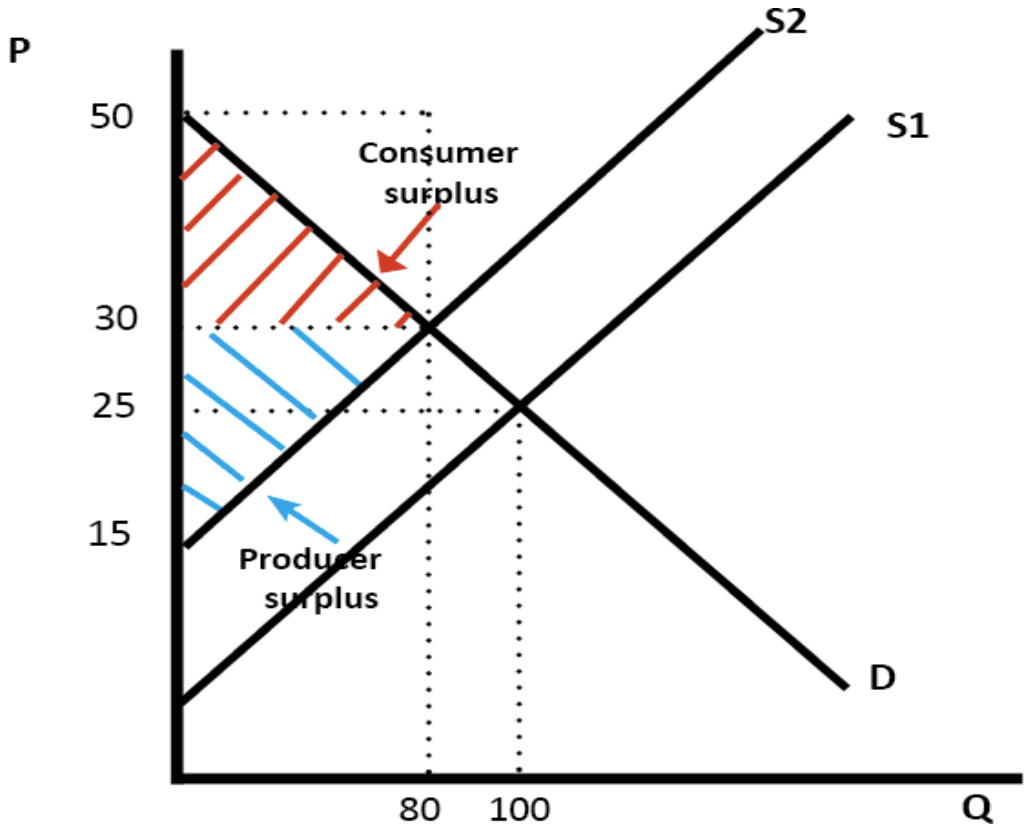


- Consumer surplus tends to be higher when markets are competitive and prices are low.
- Consumer and producer surplus will be maximised in a free market where price is determined by supply and demand.
- A monopoly that can set higher prices will be able to reduce consumer surplus.
- For example, peak train fares are an attempt to charge higher prices to those commuters willing to pay the higher price – and capture consumer surplus.

Producer surplus

- Producer surplus is the difference between the price suppliers receive and the price that they would have been willing to supply the good at.
- If the market price is £10, and their supply curve shows that they would have supplied it at £8, they have a producer surplus of £2.

Producer surplus after fall in supply



- In this case, supply shifts from S1 to S2, the market price rises from £25 to £30. Quantity falls from 100 to 80.
- In this case, we see a decline in consumer surplus. Producer surplus also falls.

Calculating consumer surplus

We can calculate a right angled triangle, using formula --- 1/2 x height x base

- Price = £30, quantity equals 80.
- The maximum consumer surplus = £50-£30 = £20
- To find the area of consumer surplus = (£20 × 80)/2 **= £800**

Calculating producer surplus

- The maximum producer surplus is £30-£15 = £15
- The area of producer surplus = (£15 × 80)/2 **= £600**

Importance of consumer surplus

- A monopoly may be able to reduce consumer surplus, limiting the amount of goods consumers can buy.
- Goods with large consumer surplus may be subject to tax by the government because consumers will tend to keep buying them, despite higher tax. An example includes cigarette tax.
- In evaluation, it should be remembered consumer surplus is hard to measure in practise --- consumers don't always know exactly their marginal utility

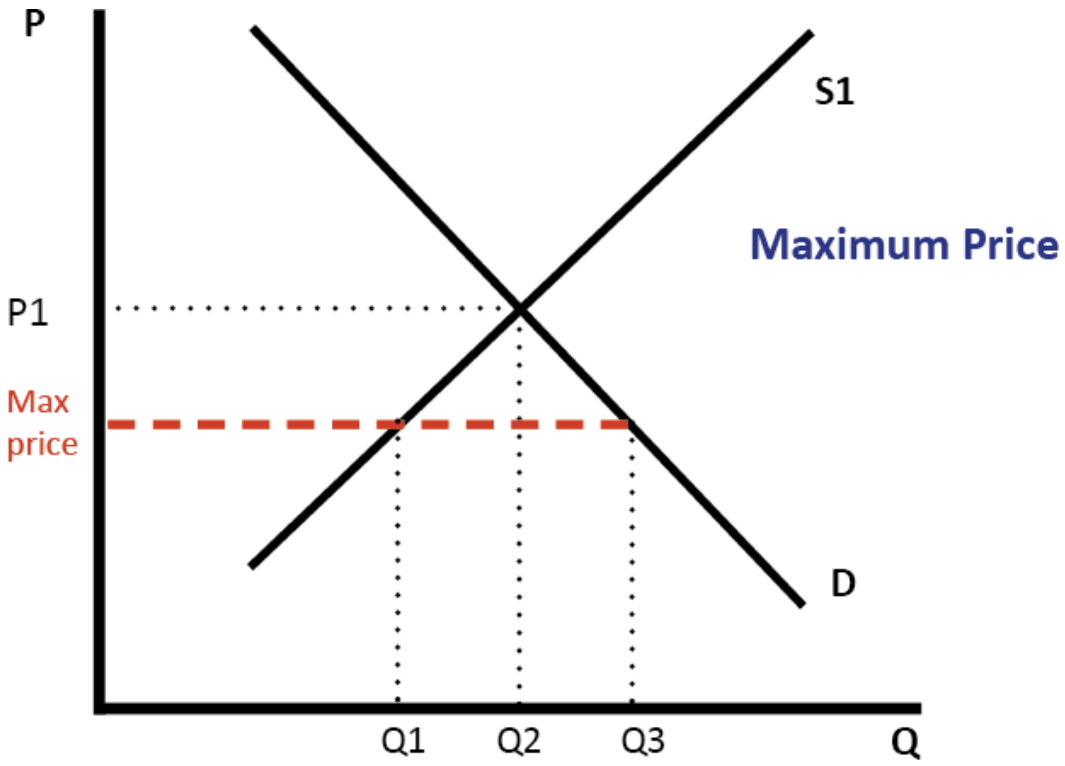
Importance of producer surplus

- The level of producer surplus determines the amount of profit a firm makes. If producer surplus is reduced, it may make the market less profitable and firms may be forced to cut back on output or leave the market.
- An increase in producer surplus may encourage firms to expand production.

Government intervention

Maximum prices

A maximum price occurs when the government sets a price limit and prevents prices from rising above that level.



For example, if renting a house in London is £120 a week, the government may decide to have a maximum price of renting of £100 a week to make housing more affordable.

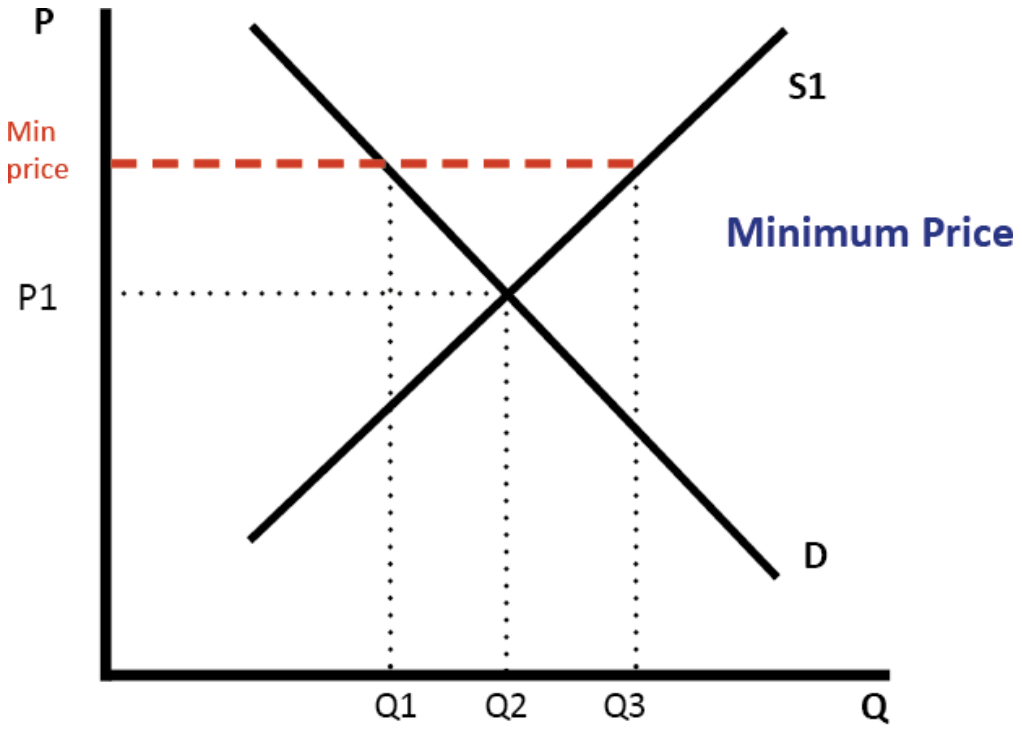
Problem of maximum prices

The problem of a maximum price is that if the price is set below the equilibrium, we get a shortage. At Max Price, demand is greater than supply (Q3-Q1). This leads to waiting lists and encourages a black market.

- The extent of the shortage depends on the elasticity of demand and supply. If supply is inelastic, there will be little reduction in availability.
- Note: If the maximum price was placed above the equilibrium, it would have no effect.

Minimum prices

- A minimum price occurs when the government sets a price floor, and doesn't allow prices to go below that level.
- With minimum prices, the government may be committed to buying the surplus.



The problem of a minimum price is that we get a surplus. At Min price, supply is greater than demand (Q3-Q1). To maintain the Min price, the government has to buy the surplus.

- Note: a minimum price below the equilibrium would have no effect.

Common Agricultural Policy (CAP)

The EU had a series of minimum prices for agricultural products. The aim of CAP was to:

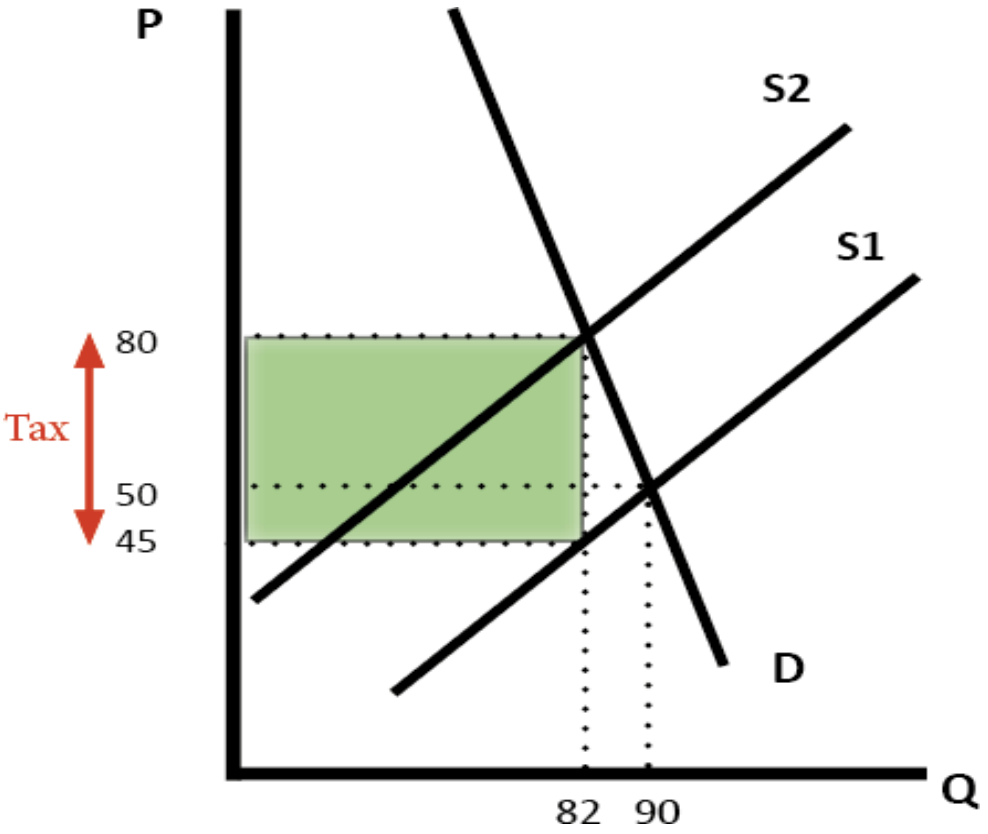
1. Ensure minimum income for farmers by guaranteeing a minimum price.
2. Ensure availability of supply.

The problem with CAP and this scheme of minimum prices was that:

1. It encouraged over-supply
2. It became very expensive to keep buying the surplus output.
3. Resources were wasted on growing food that was not used.
4. It became difficult to take away the effective subsidy for farmers.

Tax

- Tax shifts the supply curve to the left and makes the good more expensive. This will reduce demand.
- The government can use tax for demerit goods and goods with negative externalities.
- The aim is to both raise revenue and reduce demand for certain types of goods.



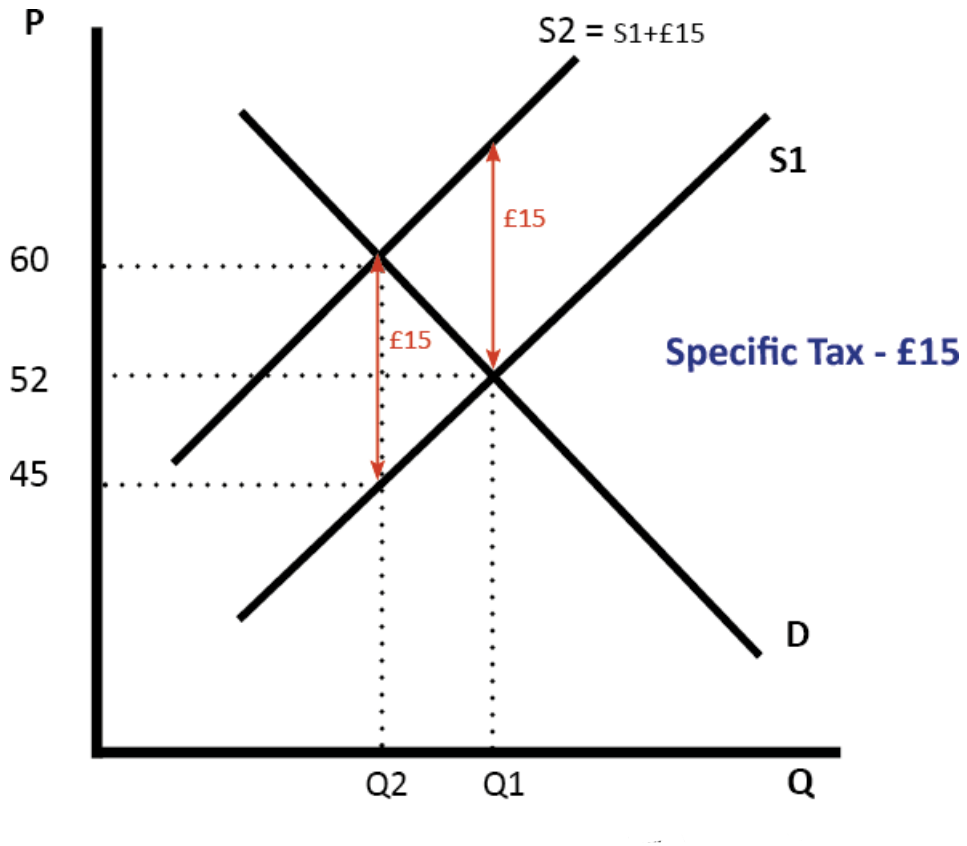
- In this example, the specific tax is £35 per unit (80-45).
- The tax increases the price from £50 to £80. Quantity falls from 90 to 82.
- The total tax revenue for the government will be: 82 × £35 = **£2,870**

The burden of tax

The burden of the tax is shared between consumers and producers.

- The consumer burden shows the extra amount that they pay (how much tax raises price).
- Producers also lose out from tax because they get a lower price after paying tax to the government.

Specific tax



A specific tax places a certain per unit tax on the good. It is the same whatever the price, for example, tobacco duty or alcohol excise duty.

In this case the specific tax is £15, and it reduces the quantity from Q1 to Q2. The price rises from £52 to £60.

- If Q2 = 120 and Q1 = 140

In this case, the revenue raised by the government will be

- £15 * 120 = £1,800

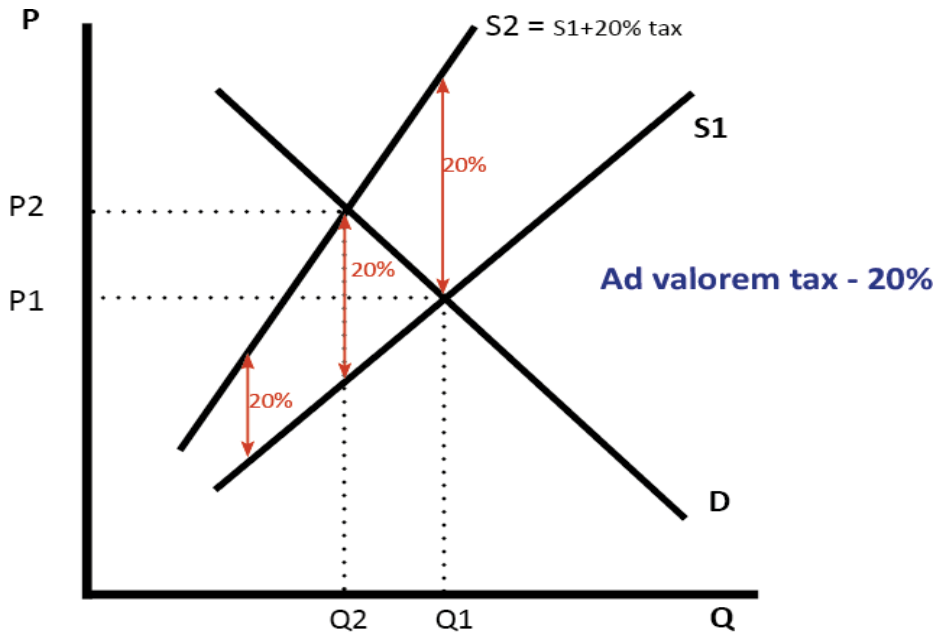
Consumer burden.

The consumer burden of the tax is the amount the price rises. In the above case, the market price rises from £52 to £60.

Producer burden

The producer burden is the reduction in the amount they receive. They used to get £52, but after tax only get £45.

Ad valorem tax

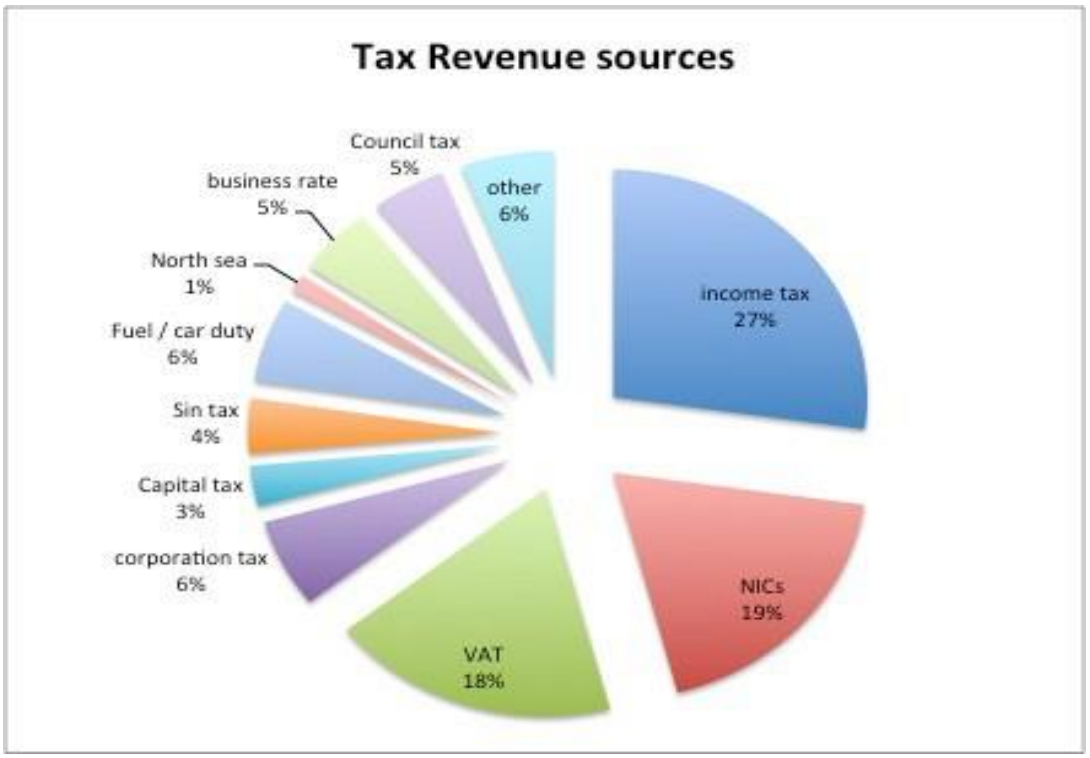


An ad valorem tax places a certain percentage on the good. For example, VAT in the UK is 20%. The higher the price of the good, the more tax is paid.

Types of taxation

The government collects tax revenues from a variety of sources. The main types of taxation are:

- **Direct taxation** – income tax, NI contribution. These taxes are taken directly from a person's wages. Income tax is progressive because it takes a bigger % of tax from people with high incomes.
- **Indirect taxation** – VAT, excise duty. Consumers pay these taxes indirectly; when a good is bought, the firm has to pay the VAT rate to the government (20%). Indirect taxes also include excise duty (e.g. alcohol, tobacco) and petrol taxes.
- **Progressive tax** occurs when those on higher income levels pay a higher % of their income in tax, e.g. the UK has a top rate of 45% on marginal income over £150,000; this is a progressive tax.
- **Regressive tax** occurs when an increase in income leads to a smaller % of their income going on the tax, e.g. excise duties and VAT take a bigger % of low income earners.



Marginal and average tax rates

Income tax is a marginal tax rate system. UK tax rates

- Tax threshold £10,000
- Basic rate @20% on income over £10,000
- Higher rate @20% on income over £41,864

If you earn £11,000 in a year.

- The first £10,000 is tax free. Therefore, you only pay income tax on the last £1,000.
- Therefore, the income tax payable on £1,000 @20% is £200.
- In this case, the average tax rate is 200/11,000 an average income tax of 1.8%.

If you earn £30,000.

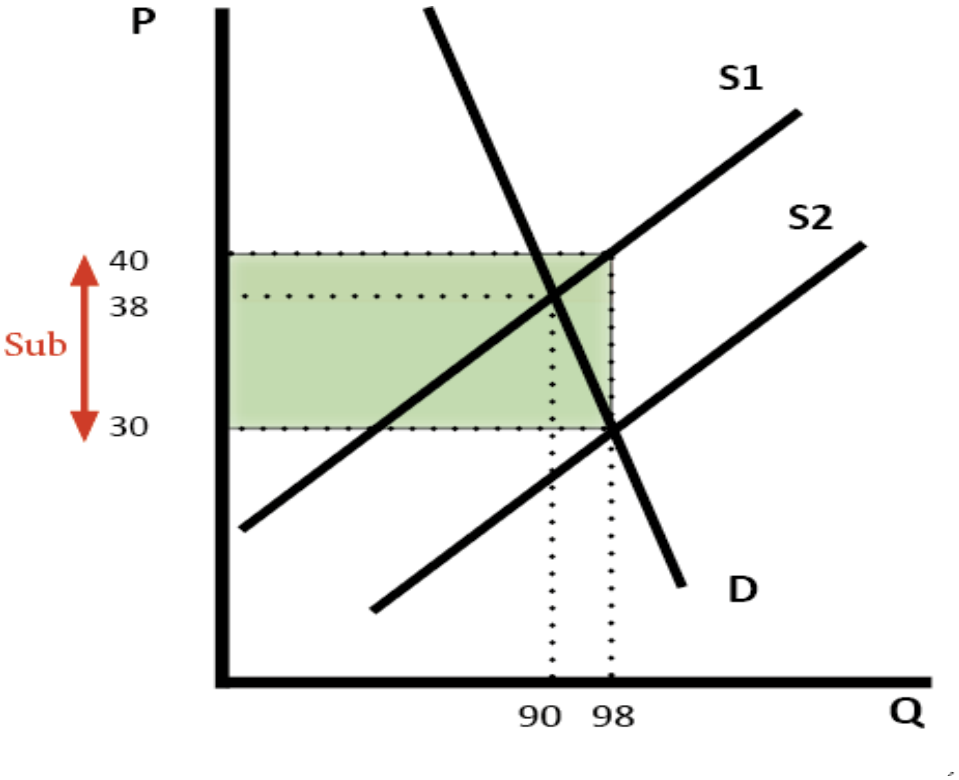
- You will pay the basic rate on the marginal tax above the threshold £30,000-£10,000.
- Your income tax will be 20% of £20,000 = £4,000
- An average tax rate of 13%.

If you earn £50,000. Your income tax will be:

- 0 – 10,000 @ 0% = £0 (tax threshold)
- 10,000 – 41,865 @ 20% = £6,375 (basic rate)
- 41,864 – 50,000 @ 40% = £3,254 (higher rate
- Total income tax = £9,629 or 19% average tax rate.

Subsidy

- A subsidy means the government pays a part of the cost of a good. For every good sold, the government will give firms a proportion of the cost.
- The aim of subsidies is to encourage consumption of goods which are underprovided / under-consumed in a free market.
- A subsidy shifts supply to the right and reduces the price.



In this case, the subsidy is £10 per unit. The subsidy increases Q from 90 to 98.

- The total cost to the government is 98 × 10 = £980.

Why subsidise goods?

1. Goods that have positive externalities (benefits to other people) are subsidised to create more social efficiency. For example, taking the train to work helps reduce congestion.
2. To make important public services available to those on low income, e.g. people may not be able to afford dental treatment without subsidies from the government.

Transfer payments

- Transfer payments are when the government redistributes income through paying welfare benefits, such as unemployment benefit, tax credit and housing benefit.
- These payments do not create output or absorb resources directly. It involves using tax revenue to give benefits to other people.

State provision of public services

For some merit goods and public goods, the most efficient solution for market failure is for the government to provide services directly.

For example, the government could subsidise private doctors to treat people, but there are advantages to the government paying for a national health service directly:

- It ensures everyone has access to this important merit good and provides greater equality in society.
- A national health service may be able to benefit from economies of scale, leading to lower average costs than small independent hospitals.
- For services like health and education, workers do not need the same profit motive of a private manufacturing firm. Therefore, there is less likely to be government failure due to a lack of incentives.
- Public goods like law and order may not be provided at all in a free market.

Advantages of the private sector providing public services

1. Increased demands are being placed on the public sector due to demographic changes. If more people went private, this would enable the National Health Services to have shorter waiting lists.
2. Provides consumers with more choice.
3. If less people use the NHS, it would enable the government to lower taxes and reduce borrowing.
4. The private sector has a profit incentive to cut costs and provide a more efficient service, e.g. public bodies may have over-staffing because of political fears about job cuts.
5. Possible diseconomies of scale in the National Health Service.

Disadvantages of the private sector

1. It is difficult to introduce a profit motive into public services such as health care; for example, it is not practical to give performance related pay to nurses / doctors.
2. The private sector may cut costs by reducing the quality of service, e.g. cutting back on cleaning.
3. May increase inequality. People on low incomes cannot afford private health.
4. Health is a merit good and will be underprovided in a free market. Therefore there is a justification for government subsidy.

Privatisation

This involves selling state-owned assets to the private sector. It is argued that the private sector is more efficient in running businesses because they have a profit motive to reduce costs and develop better services.

Benefits of privatisation

1. Reduced govt interference. State owned industries may be managed for political reasons, e.g. there could be under investment because governments take the short-term view.
2. Removing borrowing limits. State owned companies are subject to strict spending limits. Private companies are free to borrow and invest in new lines, for example Chiltern Railways have invested in new lines and stock.
3. Private companies are usually more efficient. This is because when working in the public sector, there is often little incentive to cut costs and increase profits. However, private firms will have this profit incentive, therefore they are more likely to develop new and better products.
4. Improved public finances. Receipts from privatisation could help reduce government borrowing. However this is a one off income and the government will lose future profit revenues from losing ownership of the companies.
5. Increased competition. The main benefits from privatisation occur when there is successful deregulation and an increase in competition. This will lead to the usual benefits of competitive markets:
    - Lower price leading to greater allocative efficiency P=MC
    - Better quality of consumer service as firms compete for market share.
    - Firms must be more efficient in order to cut costs and remain profitable

Potential problems of privatisation

1. Barriers to entry. If there are significant barriers to entry, such as, high fixed costs it may prove difficult to increase competition. Industries like water and railways can be seen as a natural monopoly. Therefore privatisation could create a single private monopolist and not actually increase competition.
2. Public services should be run in the public interest. Many industries which were privatised are important public services such as railways and gas. Therefore, it may not be appropriate to apply profit maximising principles in these industries.
3. Positive externalities. Industries such as railways have positive externalities, such as reduced pollution and congestion. Therefore in a free market they will be under consumed. If the government manages these industries it can make sure they overcome market failure and take external benefits into account.

Public ownership / nationalisation

Public ownership or nationalisation occurs when the government owns a key industry and runs it in the public interest, e.g. until 1980s, many industries, like coal, railways, electricity and airports were owned by government.

Arguments for public ownership

- Industries can be run in the public interest.
- Many industries are natural monopolies, making competition not possible. Government ownership can avoid monopoly exploitation.
- Government can take into account externalities, e.g. social benefits of railways.
- Government can fund long-term investment, e.g. invest in building new roads / railways which may not give a return for many years. Profit making firms may not want to take this long-term risky option.

Arguments against public ownership

- In public ownership, managers and workers may lack enough incentives to cut costs and be efficient.
- Government firms may be reluctant to take decisions for political reasons, e.g. close down loss making coal pits.
- An alternative to public ownership, is privatisation accompanied with deregulation (encouraging competition) and regulation of private monopolies, if necessary.

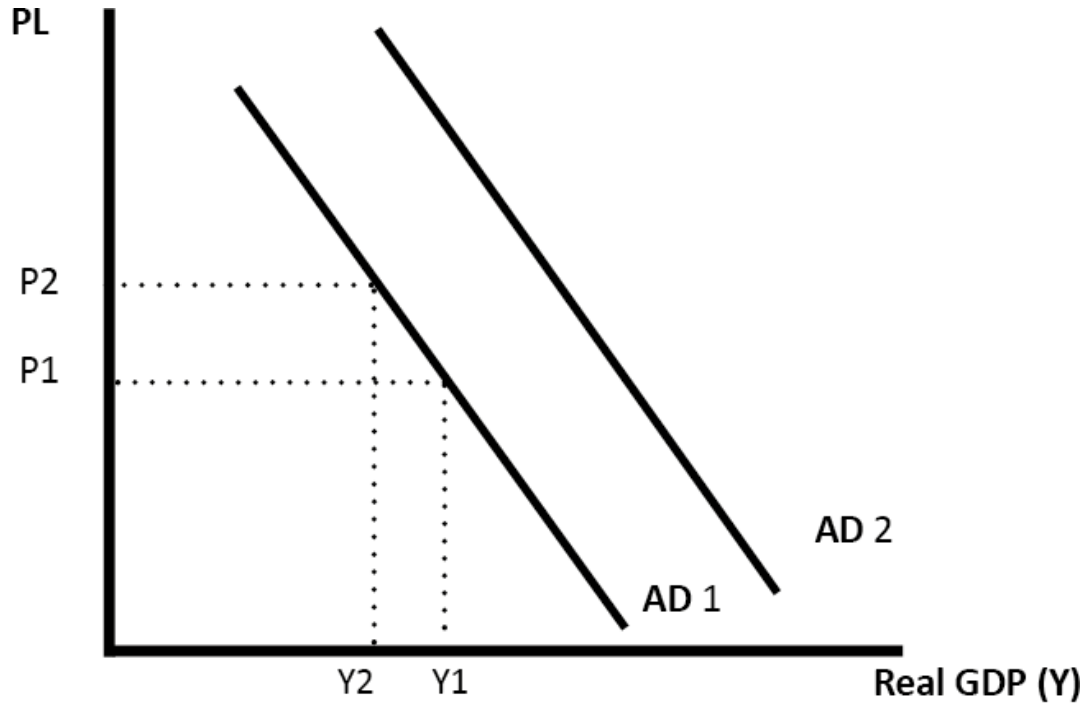
Paper 2 Macro economy

Aggregate demand

Aggregate demand **(AD)** is the total demand for goods and services in the economy. **AD = C+I+G+(X-M)**

- **C** = Consumer expenditure on goods and services (60%)
- **I** = Gross capital investment (spending on capital goods, e.g. machines)
- **G** = Government spending
- **X** = Exports
- **M** = Imports

Shift in AD and movement along the AD curve



An increase in the price level (P1 to P2) causes movement along the AD curve.

- At a higher price level, ceteris paribus, consumers have less disposable income (money to spend).
- At a higher price level, UK exports will be relatively less competitive, leading to lower export demand.
- A shift in the AD curve would occur if there was a change in factors like real income; higher income would shift AD to the right. Consumers would buy more at the same price level.

Shift in AD

- If there was an increase in income, the AD curve would shift to the right (AD1 to AD2).
- AD could shift to the right if there was a rise in investment, exports or government spending.

Consumer spending (C)

Consumer spending is the biggest component of AD (approx. 60-65% of AD). Consumer spending is determined by:

- **Disposable income**. This is income after taxes and benefits. Rising real wages would increase disposable income and shift AD to the right.
- **Saving**. The alternative to spending disposable income is to save. If income stays constant, but consumers want to increase their savings, then consumption will fall.
- **Consumer confidence**. If consumers are pessimistic about the future, they will prefer to save, pay off debt and reduce their current spending. Low confidence will shift AD to the left. High confidence will encourage spending.
- **House prices / wealth**. Rising house prices tend to increase consumer spending through a positive wealth effect. In the UK, many people own their houses. If house prices rise, they could gain equity withdrawal – re-mortgaging the house and taking money to spend. They will also feel more confident if their house is worth more.
- **Income tax / VAT**. A cut to income tax will increase consumers' disposable income, encouraging spending.
- **Interest rates**. Lower interest rates reduce the cost of borrowing encouraging spending. Lower rates also make consumption more attractive than saving in a bank.
- **Cost of living**. If wages stay the same, but the cost of living goes down (e.g. a fall in petrol prices), people will have more disposable income and spend more. (This factor causes movement along the AD curve.)

Investment (I)

Investment means expenditure on capital goods – factors that increase the productive capacity of the economy, e.g. machines and factories.

- Investment accounts for about 15% of AD.
- Investment affects both AD and AS.
- Investment is relatively more volatile and is strongly influenced by confidence and changes in the rate of economic growth.

Factors that affect investment

- **Confidence**. If businesses are optimistic about future demand, they will need to increase productive capacity and start to invest now. If businesses face uncertainty, they will cut back on risky investment.
- **Animal spirits**. Keynes said investment was heavily influenced by the 'animal spirits' of businessmen – did people expect their business to grow? This confidence can quickly change depending on the state of the economy.
- **Interest rates**. Investment is often financed by borrowing or using savings. Lower interest rates make it cheaper to finance investment and make more projects worthwhile.
- **Availability of finance**. Businesses may wish to borrow and invest, but access to credit is a big issue. Banks may be reluctant to give a small business a loan because it is a risky investment. In this case it may depend on businesses finding other sources of credit, such as the stock market or private investors.
- **Government regulation**. Some businesses may put off investment because of the heavy cost of regulation, e.g. the need to meet environmental standards and labour regulation. On the other hand, governments could encourage investment through offering regional subsidies.
- **Economic growth**. A key factor in determining investment is the rate of economic growth. Improvements in the rate of growth and AD will tend to increase investment. Also important is the demand from overseas and the demand for exports.

Government expenditure (G)

Government spending includes transfer payments (e.g. benefits) and direct spending, such as capital investment on public roads.

In 2013/14, the UK government spent a total of £722.9 billion (44% of GDP). Government spending is influenced by:

- **Fiscal policy**. The government may choose to use fiscal policy to try and influence AD, e.g. in a recession, the government could borrow more and spend on capital investment, such as building new roads and railways.
- **Economic cycle**. In a period of high economic growth, tax revenues tend to rise; this gives the government more money to spend on services like the NHS.
- **Political cycle**. Government may cut spending after an election to try and reduce budget deficit, but then increase spending shortly before an election.

Net trade (X-M)

The UK's main trading partner is the EU (60% of trade). Though the proportion of trade with developing economies, like China and India, is rising.

Factors that affect (X-M)

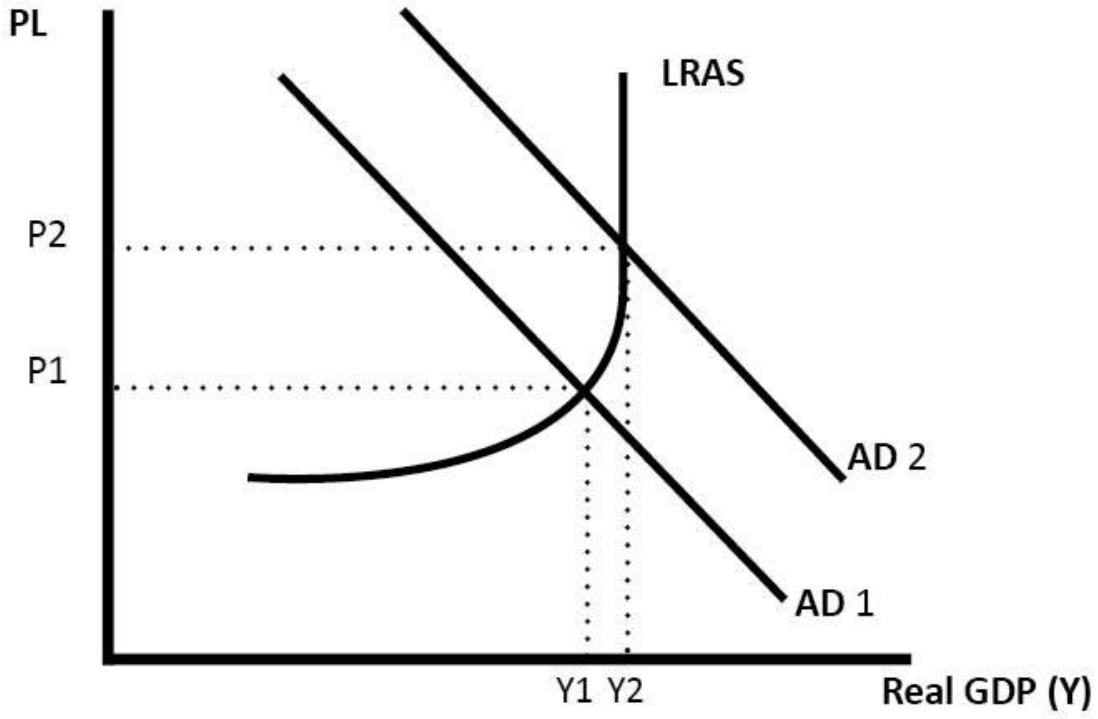
- **Exchange rates**. If there is a depreciation of the exchange rate, exports will be cheaper and imports more expensive. This will tend to increase (X-M) and increase AD.
- **Economic growth**. If UK growth is relatively higher than other countries, we will see a rise in import spending and this will reduce net (X-M). But, if there is strong growth in Europe, this will lead to higher (X-M) and higher AD.
- **Competitiveness**. If the UK has a lower inflation rate than our competitors, then UK exports will become relatively cheaper. Improved competitiveness could be due to lower wages or higher productivity.
- **Non-price factors**. In addition to price, the quality and desirability of UK goods and services will be important. If UK firms can produce better quality goods and services with unique selling points, demand for UK exports will rise and demand will be more inelastic.
- **Tariffs and protectionist measures**. If a country faced high tariffs on exports, this would reduce demand. For example, if the UK left the EU, it may find that there are higher costs / tariffs on exports to Europe.

Aggregate supply (AS)

Aggregate supply (AS) is the total productive capacity of the economy. It is the sum of all the individual supply curves for particular goods.

The AS curve shows maximum potential output; there is a strong correlation with a Production Possibility Frontier (PPF), which also shows the maximum potential of an economy.

Long run aggregate supply (LRAS)



- In the diagram there is a shift in AD. This causes a higher price level (P1 to P2) and a **movement along the AS curve**.
- In the short run there can be spare capacity and LRAS is elastic.
- But, LRAS also becomes inelastic at Y2. This means that firms cannot increase capacity beyond this point of 'full employment' without increased investment.

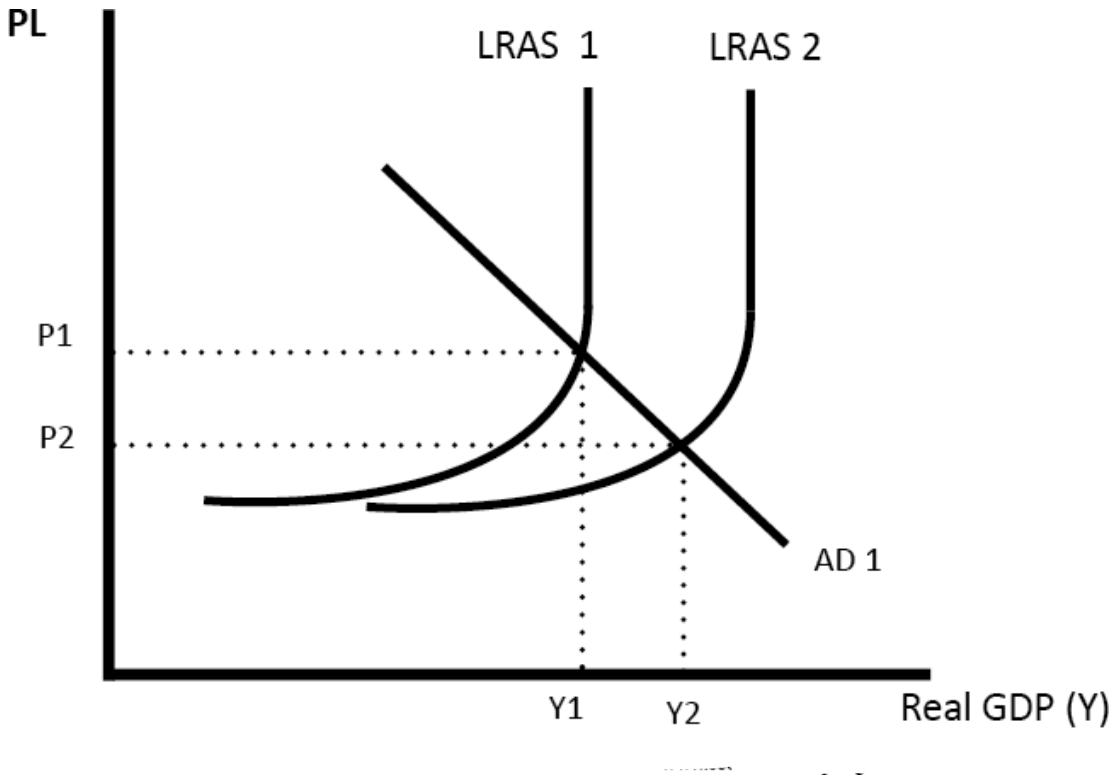
Factors affecting LRAS

In the long run, AS is determined by the quantity of factors of production and the productivity of labour / capital. (Labour productivity means output per worker.)

- **Population**. A rise in the number of working age people will increase the labour force and increase productive capacity. The working age population can be affected by birth rates and net migration. The UK labour force has increased due to net migration in the past decade.
- **Technology**. Technological improvements are one of the biggest factors affecting labour productivity, e.g. the Internet makes it easier for firms to check costs and prices.
- **Investment**. If firms or the government invest in increasing the capital stock, we will see higher AS in the long run.
- **Education and skills**. Improved education and vocational skills enables workers to be more productive and offer higher added value, increasing productive capacity.

- **Infrastructure**. Improved transport links reduce the cost of transport and encourage trade; this is important for boosting productive capacity.
- **Government policies**. The government can affect LRAS by its supply side policies on education, competitiveness and regulation. For example, privatisation and deregulation may increase efficiency and competitive pressure in industries like gas and electricity.
    - Note: There is a limit to how much the government can influence productive capacity. Most technological improvements come from the private sector.
- **Attitudes to enterprise**. A stable economic and political climate may encourage entrepreneurs to invest and develop business.

Shift in LRAS



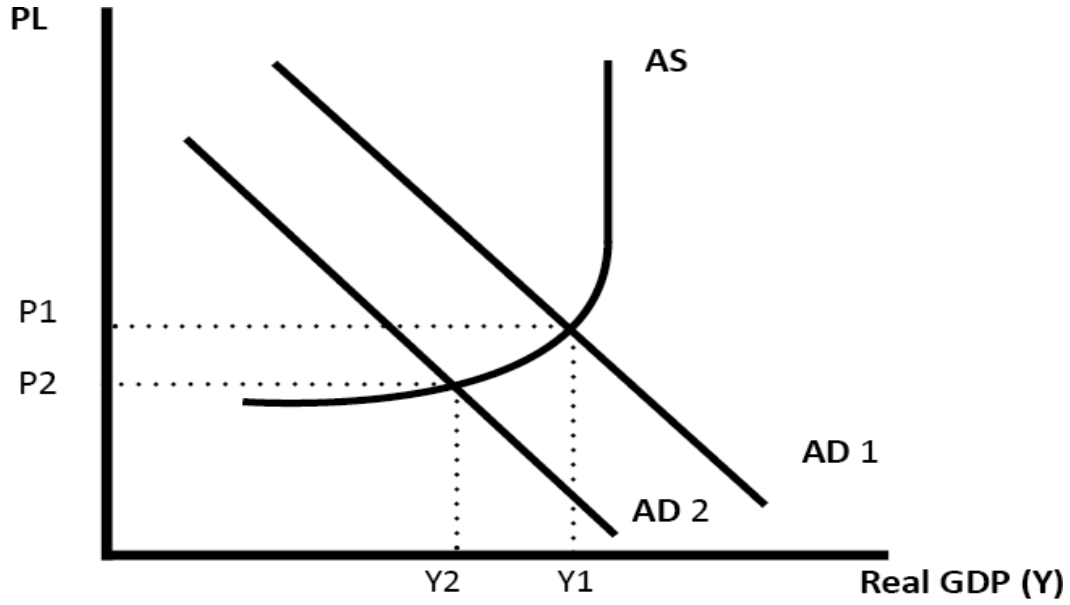
If there is an increase in productivity or an increase in factors of production, the LRAS will shift to the right. This can cause higher real GDP.

Government supply side policies, such as privatisation and deregulation, could lead to an improvement in productive capacity and shift LRAS to the right.

Supply side policies will also shift the PPF curve to the right.

Equilibrium national income

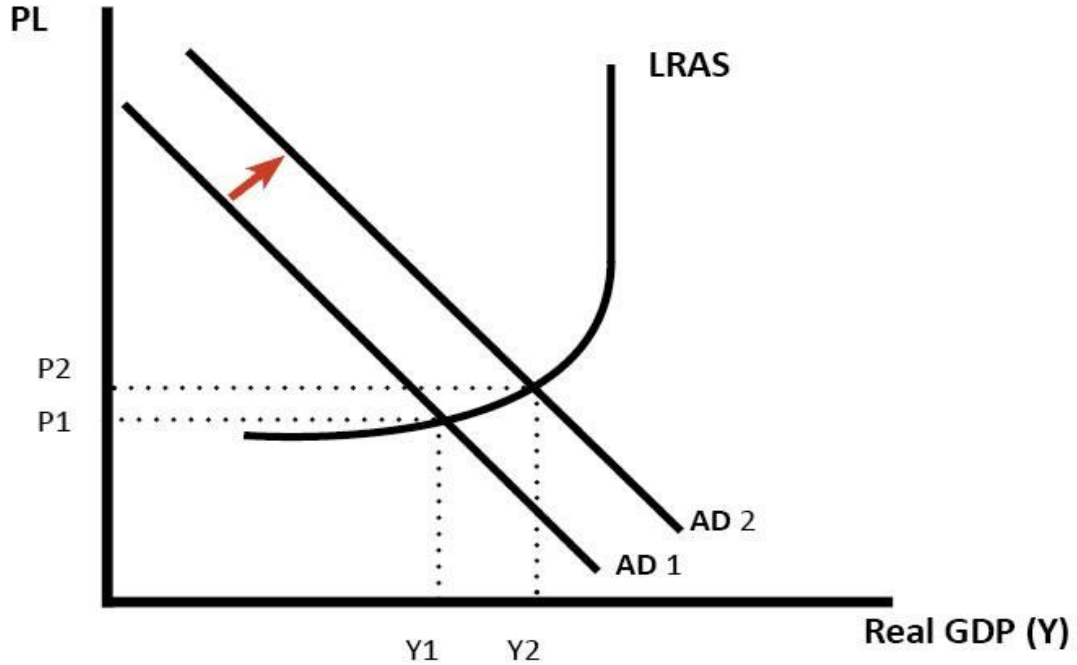
Equilibrium national income occurs where AD=AS.



- In this example, there is a fall in AD, leading to a change in equilibrium national income. Real GDP falls from Y1 to Y2, and there is a fall in the price level.

Rise in AD

If there is spare capacity in the economy, then a rise in AD will lead to higher real GDP.



Demand side factors that can increase economic growth could include:

- Lower interest rates – reducing the cost of borrowing and leading to higher investment and higher consumption.
- Rising house price – leading to a positive wealth effect, encouraging consumer spending.
- Lower taxes – increasing disposable income.
- Higher confidence in the economy – encouraging spending and investment.

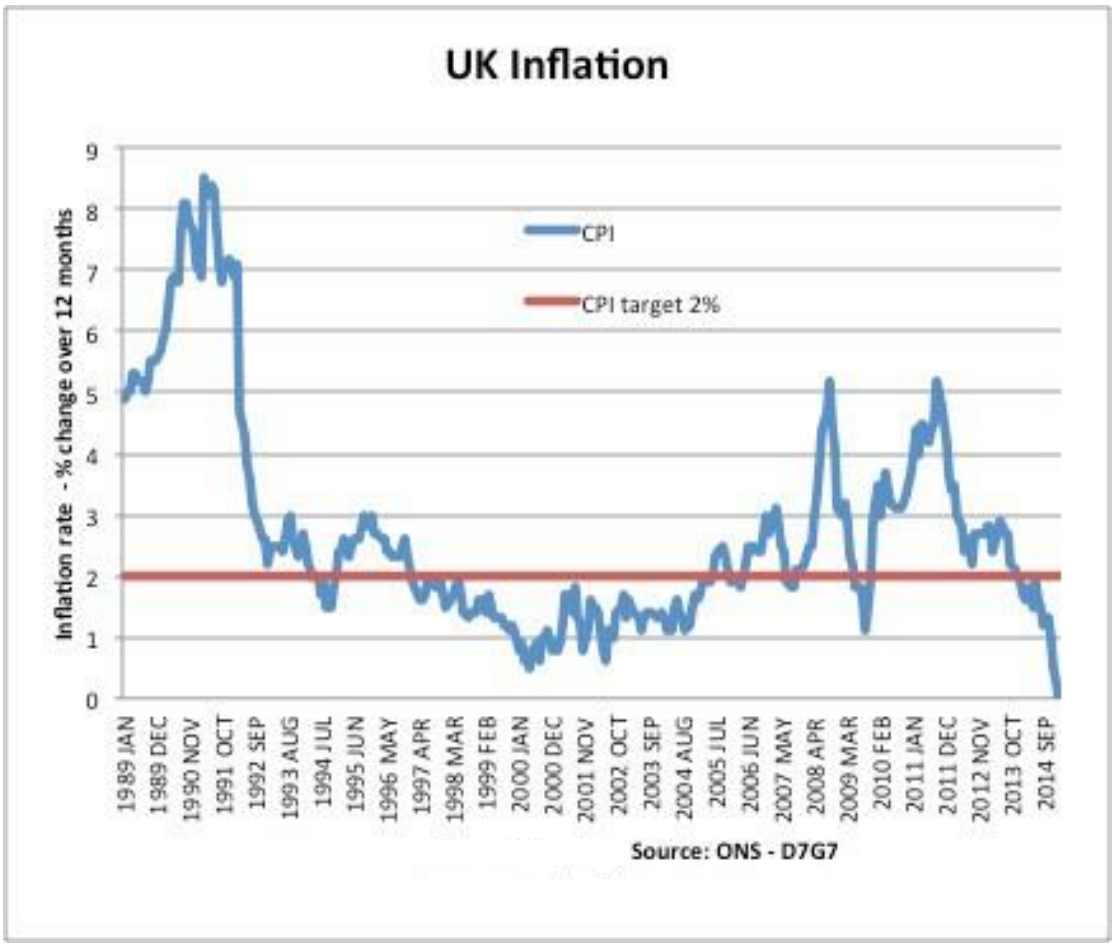
Inflation

- **Inflation**. This means a sustained increase in the general price level. If there is inflation, the value of money declines and there is an increase in the cost of living.
- **Deflation**. This means there is a fall in the price level (negative inflation rate).
- **Disinflation**. This means there is a falling inflation rate — prices are increasing at a slower rate.
- **Hyperinflation**. A very high and accelerating inflation rate. Usually inflation rate of over 500% --- where price increases become out of control. UK has never experienced inflation over 30% since 1900.
- **Inflation target**. In the UK, the government has set an inflation target of CPI = 2% +/--- 1. The Bank of England tries to achieve this target.

Money values and real data

Real data means we take into account inflation. For example:

- Real wages. If we see our nominal (monetary) wage increase by 7%, but inflation is 3%, then our real wage has only increased by 4%.
- Real interest rates. If our savings in a bank receive 5% a year, but we have inflation of 6%, we have a negative real interest rate of ---1%. This means our savings will be declining in value.



- This shows the monthly CPI inflation rate compared to the government's target of 2%.
- Between 1990 and 1993, we see a fall in the inflation rate (from 8% to 2%). This means that in this period, prices increased at a slower rate.

Measuring inflation

The main method of calculating inflation in the UK is the Consumer Price Index (CPI). This is calculated through different steps.

- **Household expenditure survey**. This seeks to measure what people spend their money on. From this we get a typical basket of the 1000 most popular goods and services. The basket of goods is updated each year to take into account changes in expenditure.
- **Weighting of different goods**. The goods and services in the inflation index are given a weighting depending on what percentage of spending they generate. For example, petrol may have a weighting of 5% of the total basket of goods. Bus travel will have a lower weighting of, say, 0.4%.
- **Price changes**. Every month, changes in the prices of goods and services are measured. The price changes are then multiplied by their weighting and combined into a single index figure that shows the percentage change.
- **Index**. The price rises are converted into an index. This has a base year of 100, and enables percentage comparisons to be made.

Problems with calculating CPI

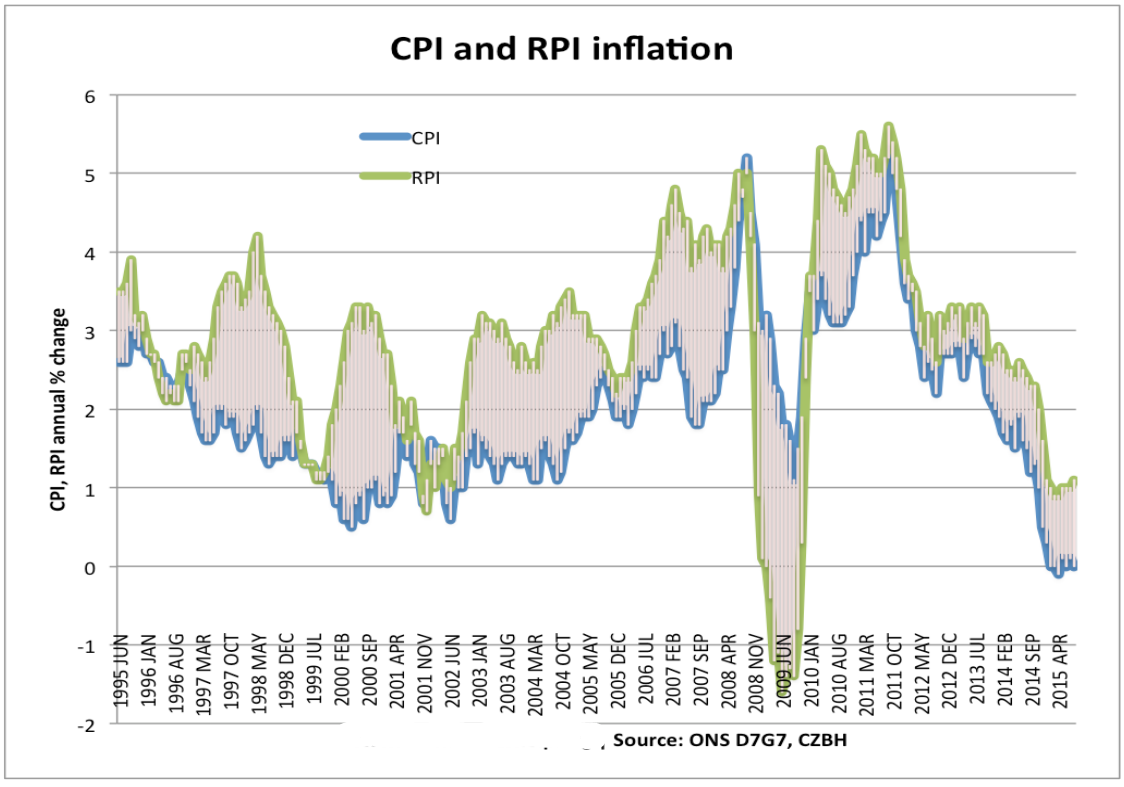
- The expenditure survey does not include everybody, e.g. pensioners are excluded, but pensioners have different spending habits, e.g. heating is more important. Young people will benefit more from the falling prices of mobile phones.
- Changes in quality: Computers have many more features than 10 years ago, so it is difficult to compare prices because they are different goods.
- CPI ignores some housing costs.
- It is impossible to measure all prices in the economy. In modern economies, the types of goods and services used are constantly changing; the CPI cannot keep up with all the trends and new types of goods.

Retail price index (RPI)

- The RPI is another measure of inflation. It is similar to CPI, but includes more factors.
- RPI includes the cost of mortgage interest payments. This can make RPI more volatile. For example, if interest rates rise, we will see RPI inflation increase more than CPI, because mortgages are more expensive.

Core inflation

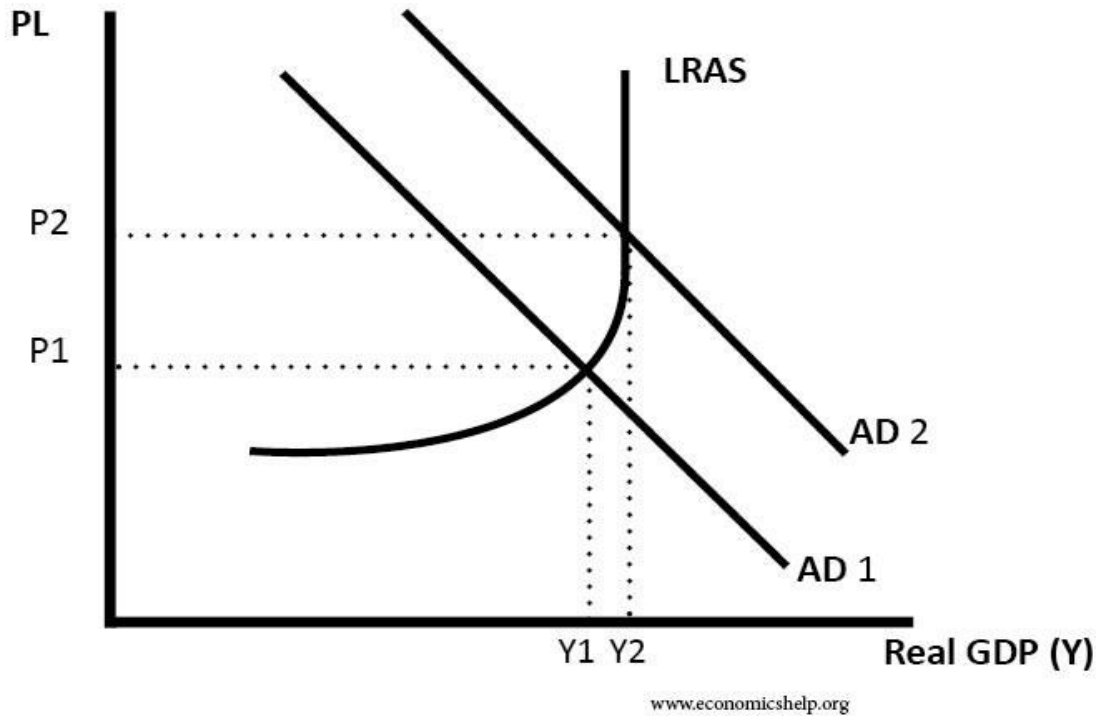
- Core inflation measures the underlying rate of inflation, excluding volatile factors like raw material prices, and taxes.
- A rise in oil prices would cause higher CPI inflation, but the core inflation would be more stable.



CPI and RPI inflation in the UK since 1995.

Causes of inflation

1. Demand-pull inflation If aggregate demand (AD) rises faster than aggregate supply (AS), then we will get inflation.



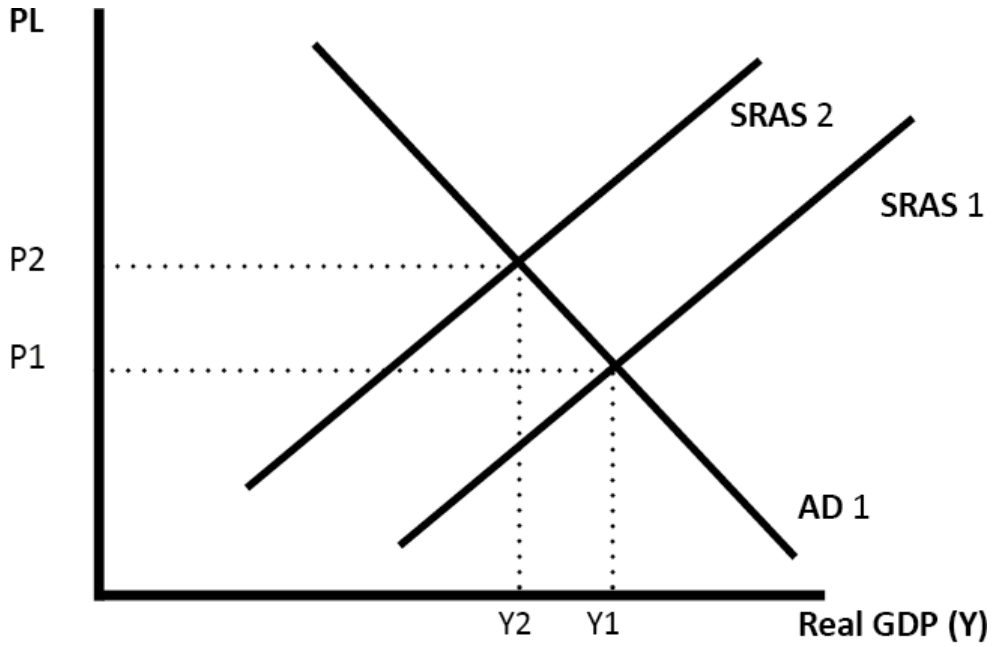
Demand-pull inflation occurs if the economic growth is too fast, e.g. if the growth is above the long-run trend rate.

As the economy reaches full capacity, rising AD leads to more inflation. Demand-pull inflation could occur due to various factors. For example:

- Lower interest rates. A cut in interest rates reduces the cost of borrowing, encouraging spending and investment.
- Rising house prices, which increases consumers' wealth and confidence.
- Boom in exports from a rising global demand, e.g. strong growth in Europe.
- Income tax cut, which gives consumers more disposable income to spend.
- A rapid rise in the money supply, e.g. the Central Bank printing more money.
- The UK experienced demand pull inflation in the late 1980s, due to rapid economic growth of 5%. This growth proved unsustainable.

2. Cost-push inflation

This occurs when there is a rise in the costs of firms, leading to short-run aggregate supply (SRAS) shifting to the left.



Cost-push inflation could occur due to:

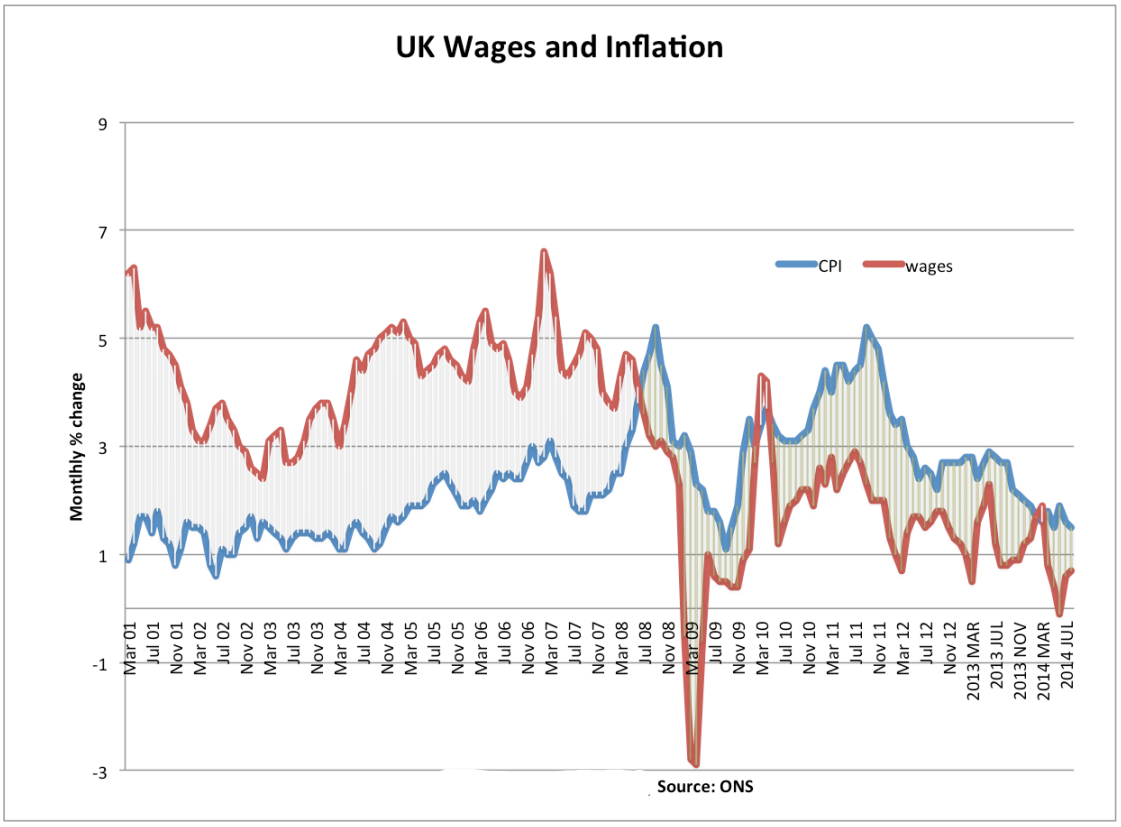
- **Rising oil prices/ raw material prices**. This would increase the costs of most firms, due to higher transport costs.
- **Rising wages**. If wages are pushed higher by trade unions or a shortage of workers, this will increase the costs of firms. (Rising wages may also cause demand-pull inflation as consumers spend more, increasing AD.)
- **Import prices**. One third of all goods are imported in the UK. If there is a depreciation in the exchange rate, then import prices will become more expensive, leading to an increase in inflation.
- In 2011, the UK had cost-push inflation of 5% despite a lengthy recession. The inflation in 2011 was caused by higher taxes, depreciation in the pound, and higher raw material/food prices.

Consequences of inflation

If inflation is high (above the government's target), we can have several negative impacts on the economy.

Costs for consumers

- **Fall in the value of savings**. Consumers who have cash savings will see a fall in the real value of their savings. If inflation is higher than interest rates, savings will decrease in value.
- **Fall in the value of debt**. High inflation will reduce the value of debt, making it easier for consumers and firms to pay back their debt. With high inflation, borrowers are likely to become better-off, and lenders are likely to become worse-off.
- **Fall in real wages.** High inflation could be damaging to workers. If inflation is higher than the growth of nominal wages, real wages will fall. In periods of high inflation, workers will need to bargain for higher nominal wages to maintain their real incomes.



Between 2001 and 2008, wages grew at a faster rate than CPI inflation. Therefore, real wages were rising. Since 2008, wages have been mostly growing at a slower rate than inflation, and therefore, real wages were falling.

- **Exam tip**: Inflation doesn't mean people automatically buy less. Inflation could be caused by rising demand, where people are spending more.
- However, inflation could cause less spending **if** the prices are rising faster than wages.

Costs of inflation on firms

- **Uncertainty**. High inflation may create uncertainty and confusion for firms. In periods of high inflation, firms may be less willing to invest because they don't know what their future costs and incomes will be. Less investment can reduce the rate of economic growth.
- **Menu costs**. High inflation can create menu costs, which means firms have to adjust price lists. Firms and consumers may also spend more time checking prices.

Costs of inflation on economy

- **Less investment**. If inflation is high, it can creates uncertainty about future costs and therefore firms are likely to reduce investment, leading to lower economic growth. It is argued that periods of low inflation are beneficial for promoting investment and sustainable economic growth.
- **Decline in competitiveness**. Relatively higher inflation in the UK can make UK firms less competitive, leading to lower exports and deterioration in the current account (or depreciation in the exchange rate).
- **Higher interest rates**. Governments may be concerned about inflation because of the uncertainty and potential for declining living standards. The Central Bank (or the government) may feel the need to increase interest rates. Higher interest rates can reduce inflation, but at the cost of lower economic growth, and a boom-and-bust economy.

Effect of a devaluation in the exchange rate on inflation

If the exchange rate falls in value, it tends to cause inflation for three reasons.

1. **Higher AD**. Cheaper exports increase export demand. More expensive imports reduce import spending and encourage consumers to buy from UK firms. Therefore, we see a rise in AD.
2. **Imports are more expensive**. Many goods are imported; after a devaluation, they will be more expensive.
3. **Less incentive to cut costs**. A devaluation makes firms cheaper without much effort so that they may have less incentive to cut costs.

The balance of payments

The balance of payments is a record of a country's transactions with the rest of the world. It shows the receipts from trade, and consists of the current and financial account/capital account.

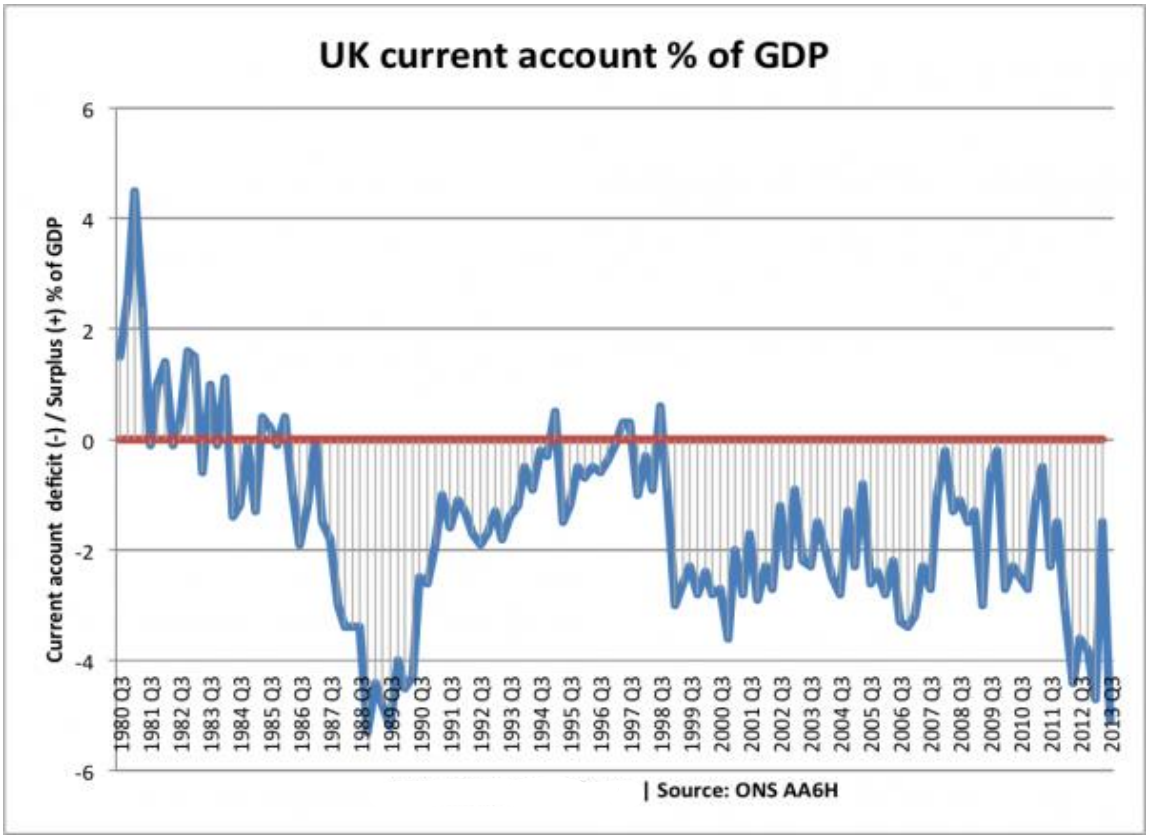
- Current account = financial + capital account + balancing item

Current account

The current account is primarily concerned with the balance of trade in goods and services. The full components of the current account include:

1. Trade in goods (visible), e.g. cars, computers, food.
2. Trade in services (invisible), e.g. tourism, insurance, banking.
3. Net income flows (interest, dividends and investment income from abroad).
4. Net current transfers (e.g. government aid, payments to EU).

- A deficit on the current account means that the value of imports is greater than the value of exports.
- A deterioration in the current account means that we get a bigger deficit or we go from a surplus to a deficit.



In the past ten years, the UK has run a persistent deficit on the current account.

Financial account

This is the other part of the balance of payments. It is a record of all transactions for financial investment. It includes

- Financial flows / Portfolio flows (e.g. saving in banks, investment trusts)
- Net capital investment (e.g. foreign firms building factories in the UK).
- Financial derivatives
- Reserve assets

Capital account

This involves capital transfers or the acquisition of non-financial assets. It is relatively small compared to the other components.

Balancing item

In the records, there will be a balancing item. This reflects the fact that it can be difficult to collect all statistics and counts for all the missing funds.

Balance of payments equilibrium

- In a floating exchange rate, the two components of the Balance of Payments should balance each other out. (i.e. equilibrium)
- If the UK has a deficit on the current account of £38bn. Then in a floating exchange rate, the financial /capital account should have a surplus of £38bn.
- This is because financial outflows must be matched by financial inflows.
- In other words to be able to pay for the imports (current account), we need some form of capital / financial inflows to be able to gain foreign current to pay for them.
- If we have a current account surplus, we will have a deficit on the financial / capital account.

Factors that cause a current account deficit

Factors that can cause value of imports (goods / services) to be greater than exports of goods/ services.

1. Overvalued exchange rate. If the currency is overvalued, imports will be cheaper and therefore there will be a higher quantity of imports. Exports will become uncompetitive and therefore there will be a fall in the quantity of exports.

2. Economic growth. If there is an increase in real wages, people will have more disposable income to consume goods. If domestic producers cannot meet the domestic demand, consumers will import goods from abroad. Consumer-led growth often causes a deterioration in the UK current account.

3. Inflation/ decline in competitiveness. If there is relatively high inflation in the UK compared to our competitors, there will be less demand for UK exports because British consumers will prefer buying cheaper imports.

- A decline in competitiveness could be caused by factors such as poor infrastructure, higher wages, and lower productivity.

4. Ability to attract capital inflows. If a country is an attractive place for inward investment, they will run a surplus on the financial account, this will enable the country to afford imports on current account.

Causes of financial account surplus

A financial account surplus implies there is a net inflow of capital investment / portfolio investment. This could be due to

- Country seen as an attractive place for inward investment. For example, low corporation tax, low wage rates, high labour productivity
- Relatively higher interest rates. This would attract portfolio investment to take advantage of relatively higher interest rates.
- Expectations of rising exchange rate. If a currency appreciates, people can make money from holding assets in that currency.
- Stability of a countries economy. In a climate of international instability, if a country has low debt and a strong foundation, it may attract capital flows.

Effect of a current account deficit

If the UK has a current account deficit, it can have the following effects:

1. Lower AD. A deficit (X-M) represents a leakage from the economy. Money is being spent in other countries and, therefore, ceteris paribus, it reduces UK aggregate demand.

- On the other hand, a current account deficit may occur due to high levels of consumer spending and economic growth. The deficit is often smaller in a recession.
- A recession in the Eurozone would reduce the demand for UK exports.

2. Depreciation. A current account deficit could cause a depreciation in the value of the exchange rate, because we are buying imports and, therefore, buying foreign currency.

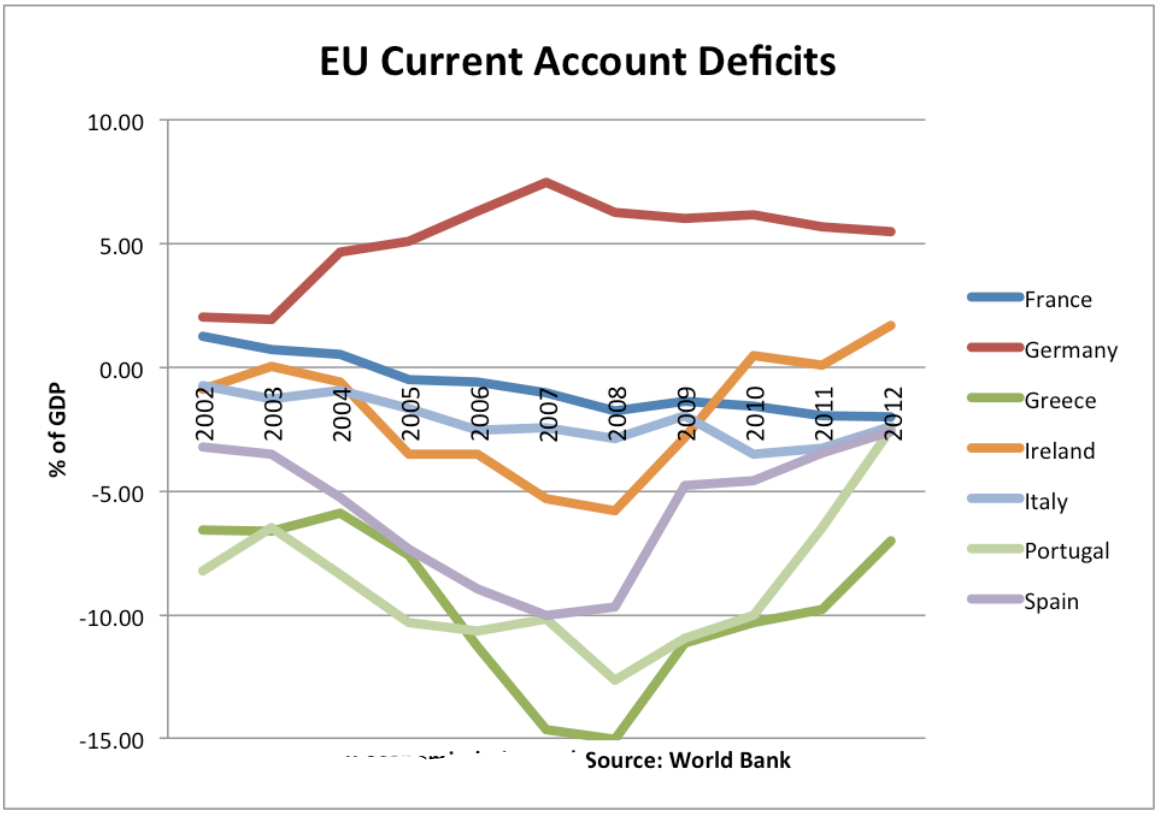
- A depreciation will act as a stabiliser to improve the current account, because it makes exports more competitive.
- If AD increases at the same rate as AS, we can get economic growth without inflation.

3. Other countries have a surplus. If UK has a deficit, then it means other countries must have a corresponding current account surplus and be benefitting from exporting to UK.

Current account surplus

A current account surplus occurs when the value of imports is less than exports.

- Some countries, such as China and Germany, have experienced a large current account surplus.



Potential problems of a large current account surplus:

- It represents an unbalanced economy — dominated by exports and showing low levels of consumer spending.
- If one country runs a large current account surplus, it means other countries will have a similar deficit. For example, the large current account surplus of Germany was matched by deficits in Southern Europe (Greece, Portugal, Spain).
- In the Eurozone, current account imbalances are more of a problem because countries can't rely on a depreciation to solve the imbalance.

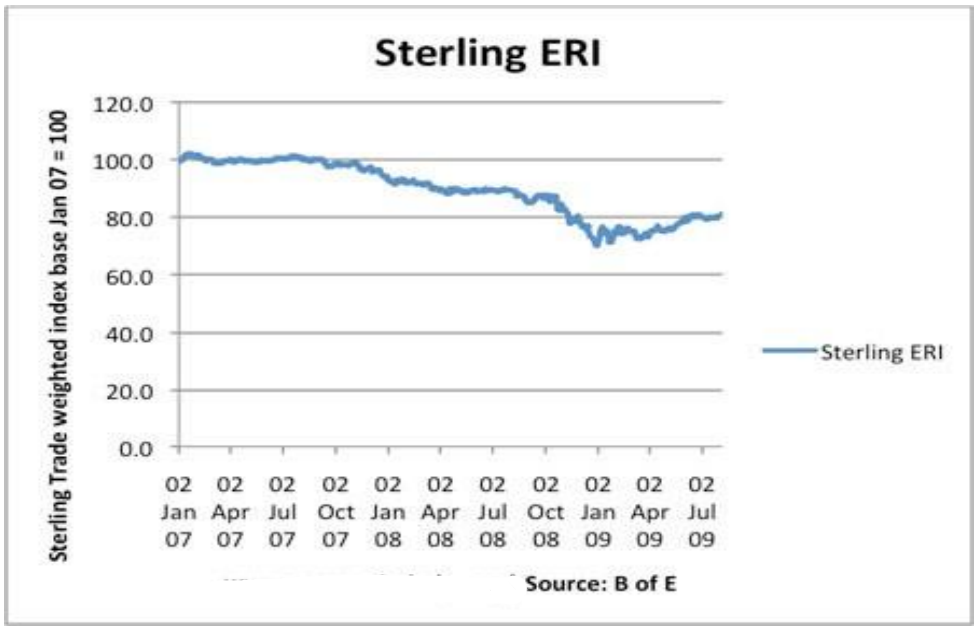
A government could reduce a current account surplus by:

- Allowing the exchange rate to appreciate, reducing competitiveness.
- Encouraging consumer spending (e.g. lower income tax), leading to higher import spending.

Exchange rates

- **The exchange rate** measures the value of a currency against other currencies.
- **Nominal exchange rate** measures the actual monetary value, and the amount of currency you can get e.g. £1=$1.5.
- **Real exchange rate** takes into account inflation and measures the amount of goods you can exchange. The real exchange rate = nominal exchange rate X (domestic price / foreign price).
- **Trade weighted exchange rate index** This is used to measure the effective value of an exchange rate against a basket of currencies. The importance of currencies in the index depends on the percentage of trade done with that country.
- **Floating exchange rate.** This is the value of exchange rate determined by market forces.
- **Appreciation.** This is the increase in value of the exchange rate in a floating exchange rate.
- **Depreciation.** This is the decrease in value of exchange rate in a floating exchange rate
- **Fixed exchange rate.** This is the government committed to keeping exchange rate at set value.
- **Revaluation.** When the value of a currency in a fixed exchange rate is increased.
- **Devaluation**. This is the decrease in value of an exchange rate in a fixed exchange rate. The government reduces exchange rate peg.
- **Managed float / semi-fixed exchange rate.** This is when the government is committed to keeping exchange rate within a certain band / peg, e.g. £1 = €1.1 to €1.2. It is a mixture of floating exchange rates and fixed exchange rates. It is sometimes known as a 'dirty float'.

Exchange rate index for the Pound Sterling



- A trade-weighted index means that we measure the value of the British Pound against a basket of currencies.
- We give a weighting to the most important currencies (e.g. the Euro and the US Dollar will have the biggest weighting because most trade is with the Eurozone and then the US).
- This exchange rate index shows a 20% fall in the value of the Pound Sterling between 2007 and 2009.

Factors that influence exchange rates

- **Inflation.** If inflation in the UK is relatively lower than elsewhere, UK exports will become more competitive, and there will be an increase in demand for Pound Sterling to buy UK goods. Countries with lower inflation rates tend to see an appreciation in the value of their currency. If a country engaged in quantitative easing (QE) this could create inflation and therefore reduce the value of the exchange rate.
- **Interest Rates.** If UK interest rates rise relative to elsewhere, it will become more attractive to deposit money in the UK. Therefore, the demand for Sterling will rise, causing "hot money flows". Higher interest rates cause an appreciation.
- **Speculation.** If foreign currency dealers become pessimistic about the state of the UK economy, they may sell Sterling. They could become pessimistic about prospects for growth, high government debt, and future inflation. Similarly if a country like Switzerland was seen as a relative 'safe haven' for saving, it could lead to a rise in demand for Swiss Francs and cause an appreciation in the Swiss Franc.
- **Balance of payments.** If a country has a large current account deficit, it may cause depreciation because there is a net outflow of currency.

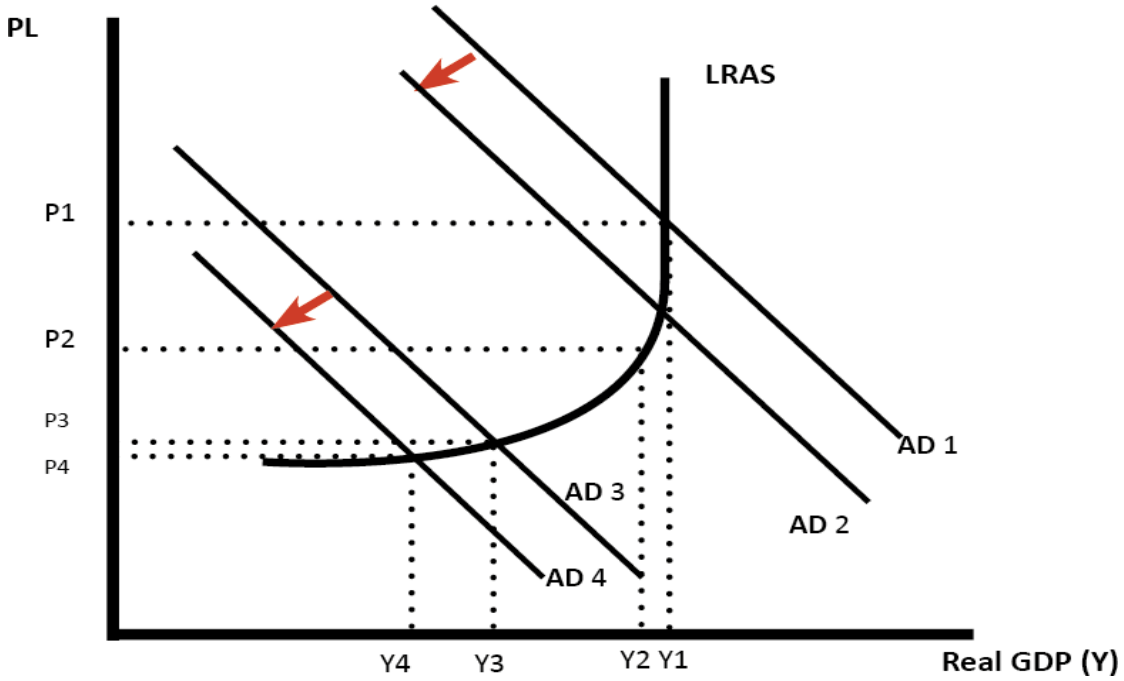
Appreciation in the exchange rate

An appreciation means the value of a currency increases. The effect of this is:

- **Exports more expensive**. Therefore, quantity of exports falls.
- **Imports cheaper**. Therefore, quantity of imports rises.
- **Lower AD**. Assuming demand is elastic, an appreciation will cause lower aggregate demand due to fall in (X-M) and lower economic growth.
- **Lower inflation**. This is due to 3 reasons:
    1. Lower import prices e.g. falling oil prices from the appreciation.
    2. Lower exports and lower AD, reducing demand pull inflation.
    3. To remain competitive, firms have a bigger incentive to cut costs.
- **Worsening of current account,** e.g. bigger deficit, because of decline in exports and rise in quantity of imports.
- **Foreign direct investment may fall**. A rise in the exchange rate may discourage foreign direct investment (FDI), because it is now more expensive for foreign firms to invest.

Evaluation of an appreciation

- **Depends on the elasticity of demand** for imports and exports. If demand is inelastic, an appreciation will have less impact on reducing demand.
- **It depends on other components of AD**. An appreciation won't cause a fall in AD, if consumer spending is growing strongly. Consumer spending is a bigger component of AD than net exports.
- **Time lags.** Often, demand is inelastic in the short term and becomes more elastic over time. Therefore, an appreciation could have a bigger impact over time.
- **It depends on productivity growth.** If the exchange rate appreciates because firms are becoming more productive, then they will remain competitive. If the exchange rate appreciates due to speculation, firms are more likely to become uncompetitive.
    - For example, countries like Germany and Japan have prospered, even in periods of an appreciating currency.
- **It depends on the state of the economy.** If the economy is growing strongly and is near full capacity, a rise in the exchange rate could help reduce inflationary pressure and keep growth sustainable. If there is already spare capacity, then an appreciation could lead to a recession.



The effects of an appreciation depend on the state of the economy. A fall in AD to AD2 reduces inflation, with little effect on real GDP.

But, a fall in AD from AD3 to AD4, leads to a big fall in real GDP.

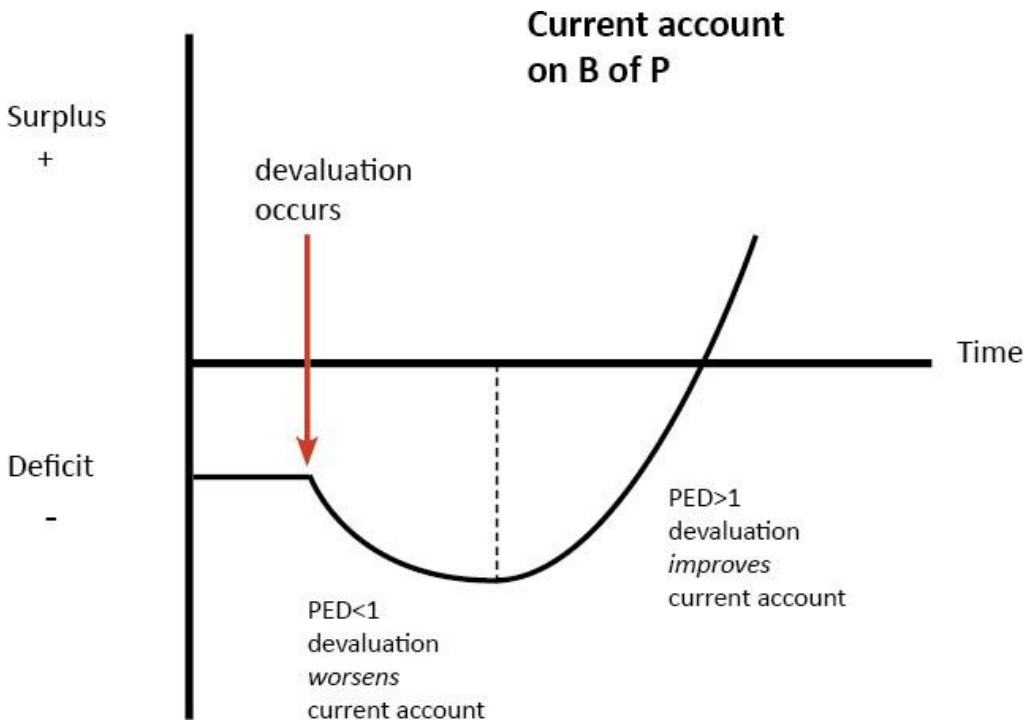
The Marshall Lerner condition

This states that a devaluation will improve the balance on the current account, on the condition that the combined elasticities of demand for imports and exports is greater than one.

- If (PED x + PED m > 1), then a devaluation will improve the current account.
- If (PED x + PED m > 1), then an appreciation will worsen the current account.

Essentially, if demand for exports and imports is elastic, then a depreciation will improve the current account.

The J Curve effect

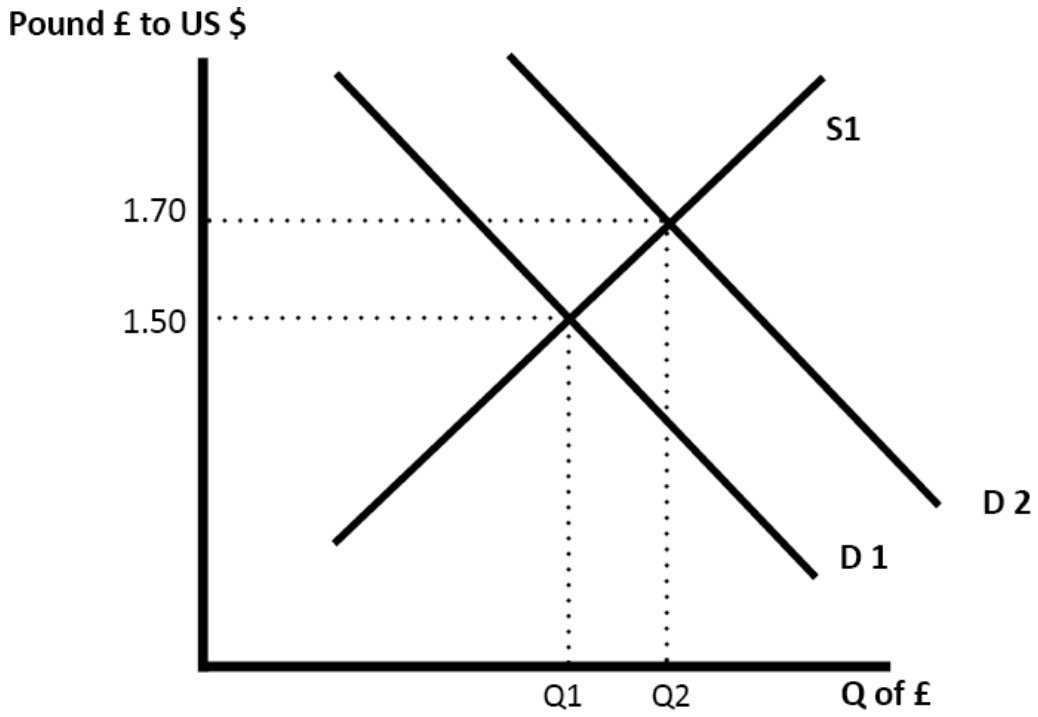


- In the short term, demand for imports and exports tends to be inelastic. Therefore, after a devaluation, the current account can get worse before it gets better.
- However, over time, demand becomes more price elastic and the current account improves.

Effects of a depreciation in exchange rate

- Exports cheaper and more competitive
- Imports more expensive
- Increased AD and higher economic growth
- Inflation may rise due to higher import prices and higher AD.
- Competitiveness improves in the short term; in the long term it may not improve due to higher inflation.

Government intervention in foreign exchange markets



In this diagram a government buying Pound Sterling has increased demand (D1 to D2) and increased the value of the £. £1 now gives more dollars ($1.70)

Methods for government intervention in foreign exchange markets

1. **Buying/ selling currency**. Governments could use foreign currency reserves to buy Pounds and increase the value of the Pound. Though foreign currency reserves are limited.
2. **Changing interest rates**. The government or Central Bank could increase interest rates to increase the value of the Pound.
3. **Improving competitiveness**. The government could use deflationary fiscal policy to reduce inflation and improve competitiveness. It could also try supply-side policies to improve long-run competitiveness.

Terms of trade

$$\text{Terms of trade} = \frac{\text{price index of exports}}{\text{price index of imports}}$$

- The terms of trade is expressed as a percentage so, in the base year, it will be 100.
- An improvement in the terms of trade (an increase in the ratio) means that the price of exports increases relative to imports.
- A deterioration in the terms of trade means that the price of imports increases relative to exports.

Factors influencing the terms of trade

- **Exchange rate**. A depreciation in the exchange rate will make exports cheaper and imports more expensive and so cause a deterioration in the terms of trade.
- **Commodity prices**. If a country produces mainly primary products (e.g. commodities like oil, sugar and coffee), then falling commodity prices would worsen their terms of trade.
- **Higher inflation**. A relatively higher inflation rate will increase the price of exports relative to imports and improve the terms of trade (though higher inflation is likely to cause depreciation in the exchange rate).
- **Demand for products**. If a country sees a growth in demand for its products (e.g. due to better quality), then rising export demand will push up export prices, causing an improvement in the terms of trade.
- **Globalisation**. Globalisation and rising demand for exports from developed countries has helped improve the terms of trade for many developing economies.

Effect of a deterioration in terms of trade

- A deterioration in terms of trade means import prices are rising relatively faster than export prices.
- It means that countries will need to export more goods to finance the same quantity of imports.
- A deterioration in the terms of trade could mean higher import prices and cost-push inflation.
- A long-term decline in the terms of trade can lead to lower living standards, because the country can afford relatively fewer imports. Countries with rising terms of trade will find they have increased purchasing power.
- A decline in the terms of trade can also be beneficial. A decline in the terms of trade caused by a depreciation in the exchange rate means exports will be cheaper. If demand is elastic, then there will be an increase in the value of exports, an improvement in the current account balance of payments and higher economic growth.

Evaluation

- It depends whether a decline in the terms of trade is short-term or long-term. A long-term decline can lead to a relative decline in living standards.
- If a country has an overvalued exchange rate, then a decline in terms of trade due to devaluation could help restore competitiveness and boost economic growth.
- The effect of a decline in terms of trade depends on elasticity of demand for exports. If demand is inelastic, then deterioration will not improve the current account.

Absolute and comparative advantage

- International trade allows countries to specialise in goods and services which they are relatively best at producing.
- **Absolute advantage.** This occurs when one country can produce a good with fewer resources than another.
- **Comparative advantage.** A country has a comparative advantage if it can produce a good at a lower opportunity cost, e.g. it has to forego less of other goods in order to produce it.
- **The law of comparative advantage**. This states that trade can benefit all countries if they specialise in the goods in which they have a comparative advantage.

Example of comparative advantage

Let us assume there are two countries, India and the UK, who could both produce items of clothing or computers.

Opportunity cost of producing clothes or computers

	Clothes	Computers
UK	1	4
India	2	3
Total	3	7

- For the UK to produce 1 unit of clothes, it has an opportunity cost of 4 computers.
- For India to produce 1 unit of clothes, it has an opportunity cost of 1.5 computers.
- Therefore, India has a comparative advantage in producing textiles, because it has a lower opportunity cost.

Opportunity cost of producing books

- If the UK produces a computer, the opportunity cost is 1/4 (0.25).
- If India produces a computer, the opportunity cost is 2/3 (0.66).
- Therefore, the UK has a comparative advantage in producing computers.

Output after specialisation

	Clothes	Computers
UK	0	8
India	4	0
TOTAL	4	8

- If each country now specialises in producing one good then, assuming constant returns to scale, output will double.
- Therefore, output of both goods has increased, illustrating the gains from comparative advantage.
- The total output is now 4 (clothes) and 8 (computers), which is higher than the previous totals.

Limitations of the theory of comparative advantage

- Assumes no transport costs but, in reality, transport costs can prohibit the benefits of trade.
- Increased specialisation may lead to diseconomies of scale (though also economies of scale can occur).
- Governments may restrict trade through tariffs.
- Comparative advantage measures current static advantage, but not any dynamic advantage (which may change over time)

Economic integration

Trading blocs --- A trading bloc is a group of countries who agree on common rules for trade and tariffs. It may also involve greater economic integration.

Free trade areas --- Free trade areas concentrate on free trade and removing tariff barriers, e.g. **NAFTA** — US, Canada and Mexico, **ASEAN** South--East Asia

Customs union --- An area of free trade with a common external tariff. The EEC was, in the beginning, a customs union.

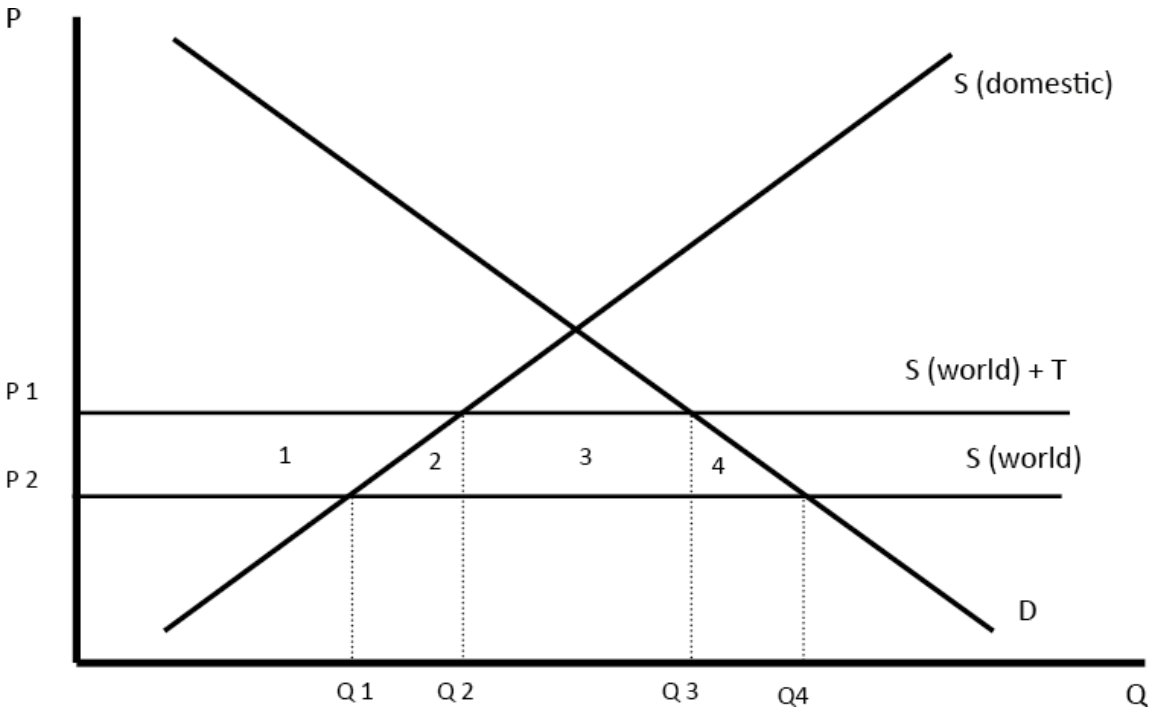
Single European market --- Economic union. The EU is aiming to become an area of close economic integration. A single market involves:

- Free trade area with common external tariffs
- Free movement of labour and capital
- Harmonisation of economic laws and regulations, e.g. common tax rates
- Cross--border economic policies, e.g. EU competition and agricultural policy

Monetary union --- A common currency (Euro) and common monetary policy (e.g. for the whole Eurozone).

Benefits of free trade

- **Increased exports.** If UK firms have a comparative advantage then, with lower tariffs, they will be able to export more, and create more jobs.
- **Economies of scale.** If countries can specialise in certain goods, they can benefit from economies of scale and lower average costs. This is especially true in industries with high fixed costs, or those that require high levels of investment.
- **Trade is an engine of growth.** World trade has increased by an average of 7% a year since 1945; it is a big contributor to global economic growth.
- **Reducing tariff barriers leads to trade creation.** Trade creation occurs when consumption switches from high cost producers to low cost producers, enabling an increase in economic welfare.

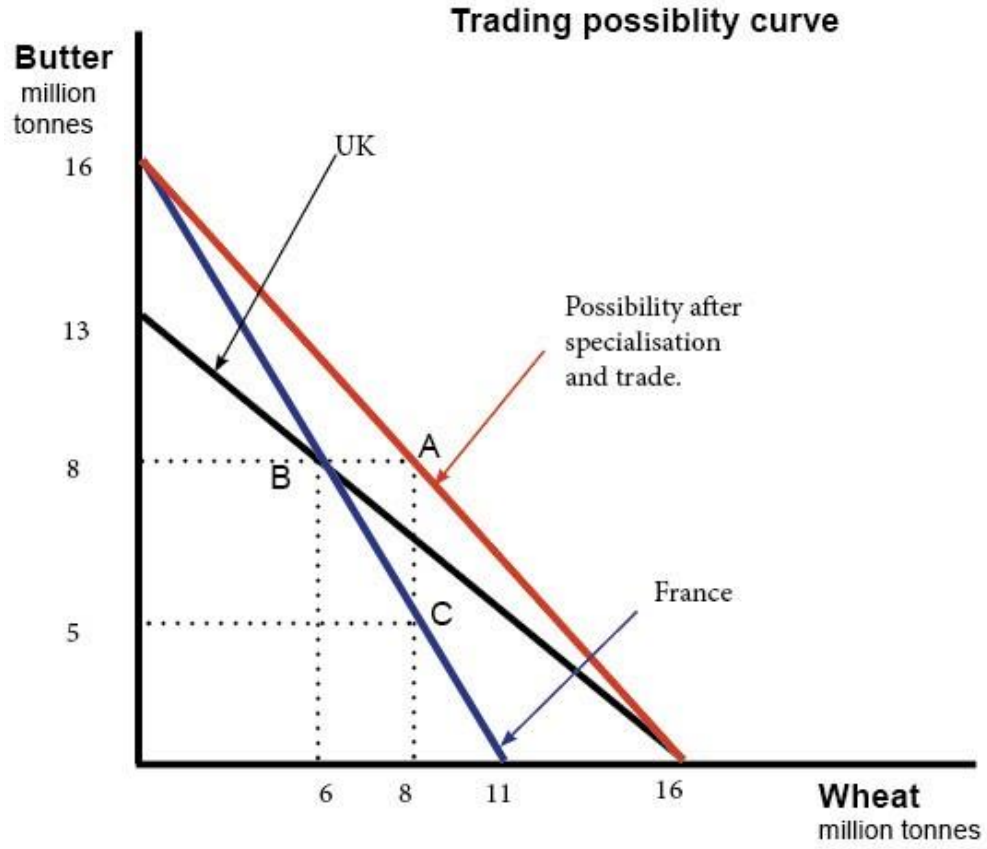


  - The removal of tariffs leads to lower prices for consumers (P1 – P2) and an increase in consumer surplus (1+2+3+4).
  - The government will lose tax revenue of area 3.
  - Domestic firms will sell less and lose producer surplus of area 1.
  - There will be an increase in overall economic welfare of: (2+4).

- **Increased competition.** With more trade, domestic firms will face more competition from abroad and, therefore, there will be more incentives to cut costs and increase efficiency. It may prevent domestic monopolies from charging too high prices.
- **Make use of surplus raw materials.** Countries with large reserves of raw materials need trade to benefit from their natural wealth.

Trading possibility frontier

Without trade, the UK and France have their own production possibility frontiers.



- The UK has a PPF of which offers choice of 16 wheat --- 13 butter. It could choose a point on its PPF such as B (8B, 6W)
- France has a PPF which offers choice of 11 wheat – 16 butter. It could choose a point on its PPF such as C 5B and 8 W

Benefit of Trade

- If both countries specialise – UK in wheat. France in Butter. Then the new total PPF is the red line (16W to 16 B)
- Now both countries can consume a point A. UK produces 16 million wheat and exports 8 million to France.
- France produces 16 million Butter and exports 8 million to UK
- The trade has led to higher consumption in both France and UK

Trade creation

Trade creation occurs when there is a reduction in tariff barriers which leads to lower prices, and an increase in economic welfare. Trade creation means we switch from high cost producers to low cost producers.

Trade diversion

Trade diversion occurs when joining a customs union, we end up paying higher prices for imports, e.g. due to a higher common external tariff.

Protectionism

Protectionism involves policies to restrict trade. This can involve:

- **Higher tariffs** (type of tax on imports).
- **Non-tariff barriers,** e.g. the US have charges on packages under grounds of 'aviation security', and this increases the costs of imports. Other rules and regulations can make trade more difficult.
- **Voluntary export restraint** (VER) is effectively a type of quota where voluntary limits are placed on imports of goods.
- **Embargo,** e.g. US embargo with Cuba.
- **Government subsidy**. Government subsidies effectively give the firm an unfair competitive advantage. This has often occurred with national airlines.
- **Excessive administrative burdens 'red tape'**. One way to keep imports out of a country, is to place very high administrative burdens on importing goods. For example, implementing a new environmental regulation, which makes it difficult for foreign firms.
- **Distorted exchange rate**. Keeping your currency artificially low makes exports relatively more competitive.

Arguments for restricting trade

- **Infant industry argument.** If developing countries have industries that are relatively new then, at that moment, these industries would struggle against international competition. Therefore, they need tariff protection while they develop their industries to be more competitive.

- **The senile industry argument.** If industries are declining and inefficient, they may require a large investment to make them efficient again. Protection for these industries could act as an incentive for firms to invest and reinvent themselves.

- **Need to diversify the economy.** Many developing countries rely on producing primary products, in which they currently have a comparative advantage. However, relying on agricultural products has several disadvantages:
    - Prices can fluctuate due to environmental factors.
    - Goods have a low income elasticity of demand. Therefore, even with economic growth, demand will only increase a little.
- **Protection against dumping.** The EU sold a lot of its food surplus from the CAP at very low prices on the world market. This caused problems for world farmers because they saw a big fall in their market prices. Tariffs can protect against dumping.
- **Environmental**. It is argued that free trade can harm the environment because countries with strict pollution controls may find that consumers import the goods from other countries where legislation is lax and pollution is allowed.

Government macro intervention

Fiscal policy

Fiscal policy refers to changes in taxation and government spending and the fiscal position of the government.

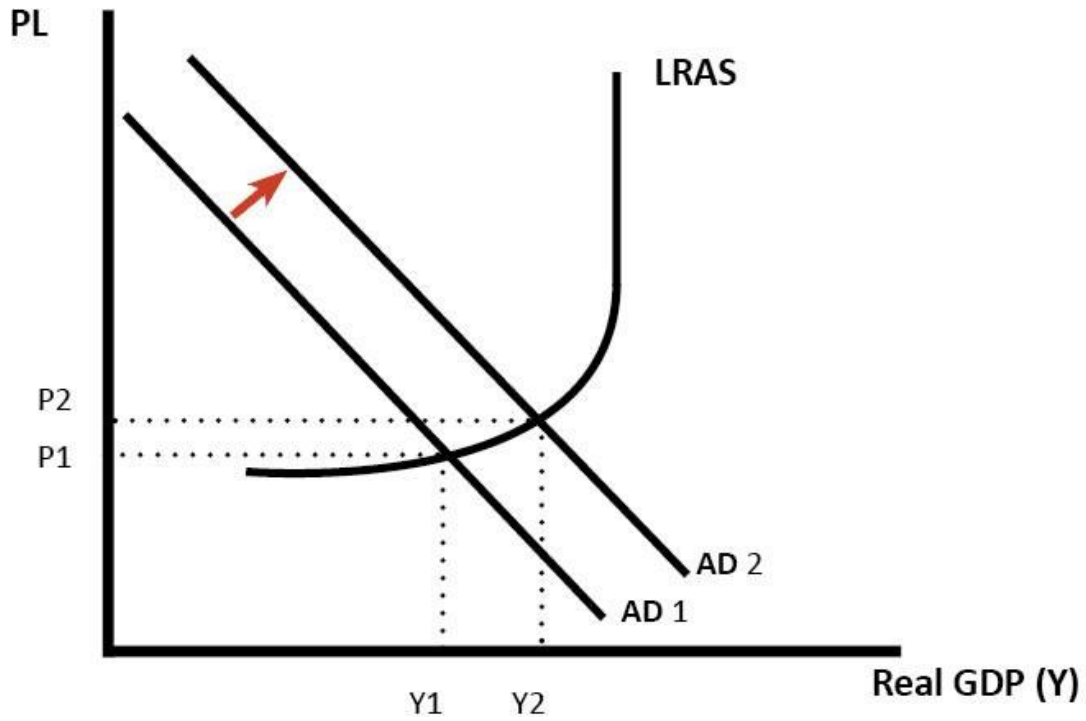
Fiscal policy attempts to influence aggregate demand (AD). The aim could be to:

1. Stimulate economic growth in a period of a recession
2. Maintain low inflation.

Expansionary fiscal policy (loose fiscal policy)

This involves lower tax rates and/or higher government spending, with the aim to increase AD.

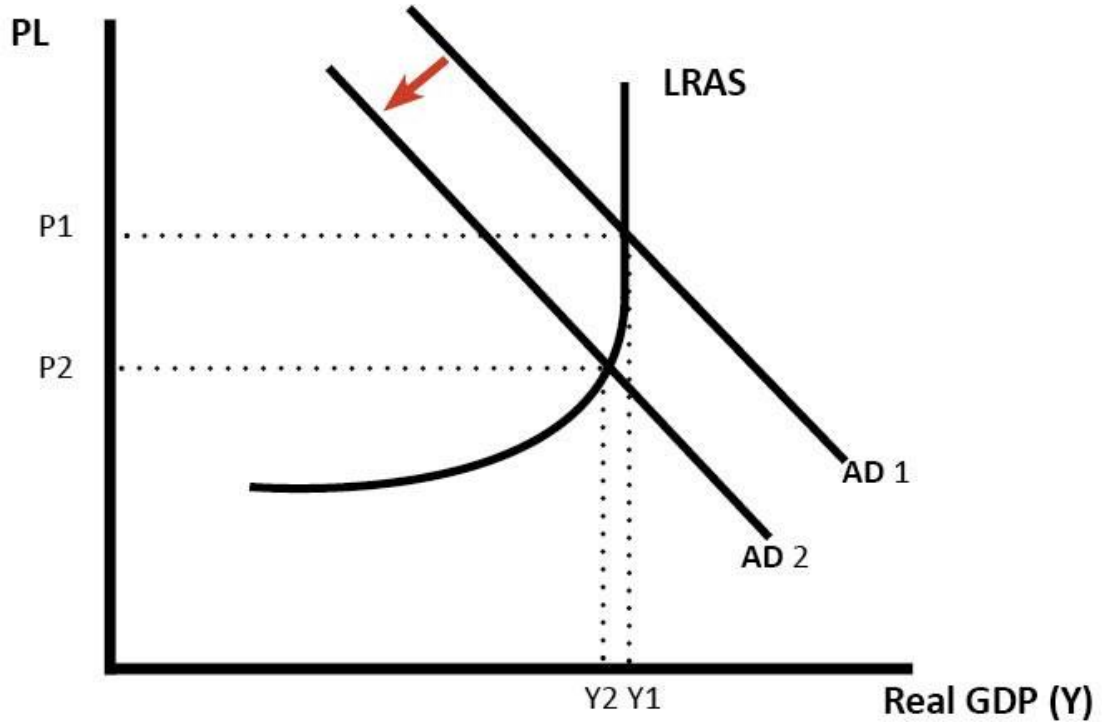
Effect of expansionary fiscal policy



- Expansionary fiscal policy will increase AD and increase the size of the budget deficit. It may also cause inflation.
- The government may pursue expansionary fiscal policy in a recession, when monetary policy is insufficient to boost demand and economic growth.

Deflationary fiscal policy (tight fiscal policy)

- This involves higher tax rates and/or lower government spending.
- The aim of deflationary fiscal policy is to decrease AD and inflation.
- Deflationary fiscal policy will also improve the budget deficit.

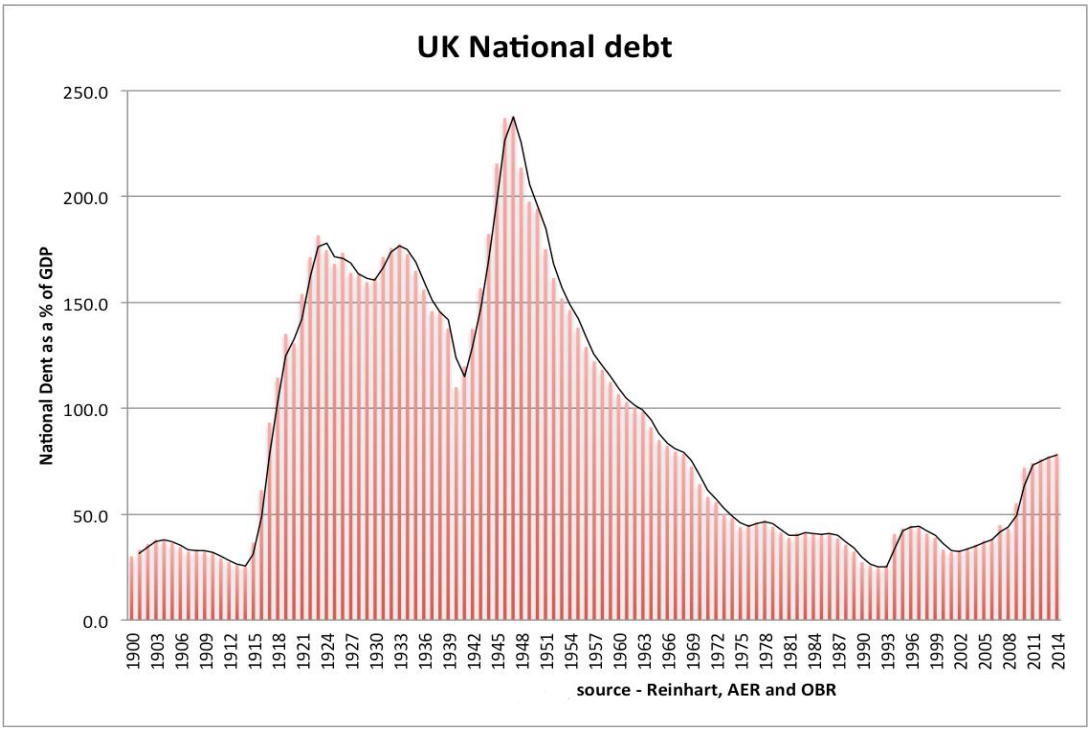


Evaluation of fiscal policy

1. **Poor information** may reduce the accuracy of forecasting future economic growth and inflation. Therefore, the government may be unsure whether they need to boost AD or reduce AD. In practise, governments find it difficult to 'fine tune' the economy with fiscal policy.
2. **It depends on other components of AD**. For example, if the government cut income tax to increase AD, it may be ineffective if consumer confidence is low and people just save the extra income.
3. **Disincentives to work**. Higher income tax to reduce inflation can create disincentives to work, reducing productivity and AS.
4. **Time lag** involved in influencing AD. If the government wanted to increase AD, they could commit to more government spending. But, there will be delays in actually implementing higher spending, and then delays in this spending affecting the wider economy.
5. **Budget deficits.** Expansionary fiscal policy (higher spending, lower tax) will increase government borrowing. This could lead to higher interest rates in the long term or even cause markets to lose confidence in debt levels.
6. **Crowding out**. If the government spend more by borrowing from private sector, it may reduce the amount of money the private sector has to spend.

The national debt

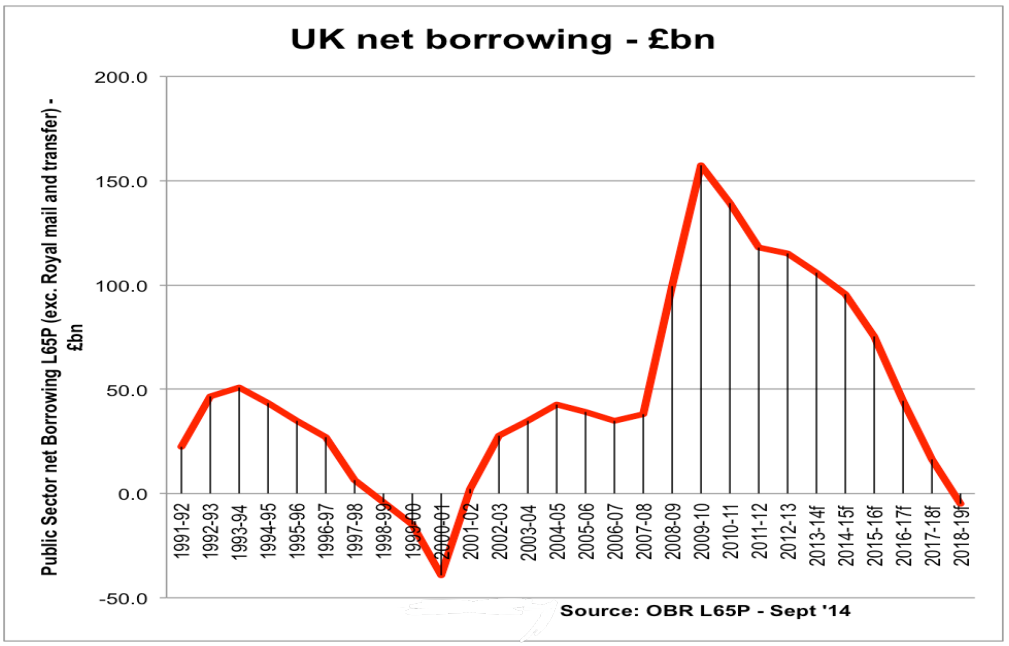
National debt (public sector net debt) is the total (cumulative) amount of debt that the government owes the private sector.



- In January 2015, the net debt was **£1,483.3** billion, equating to 80% of GDP.

Government borrowing

- The budget deficit is the annual amount the government needs to borrow from the private sector. It is the difference between government spending (G) and tax revenue.

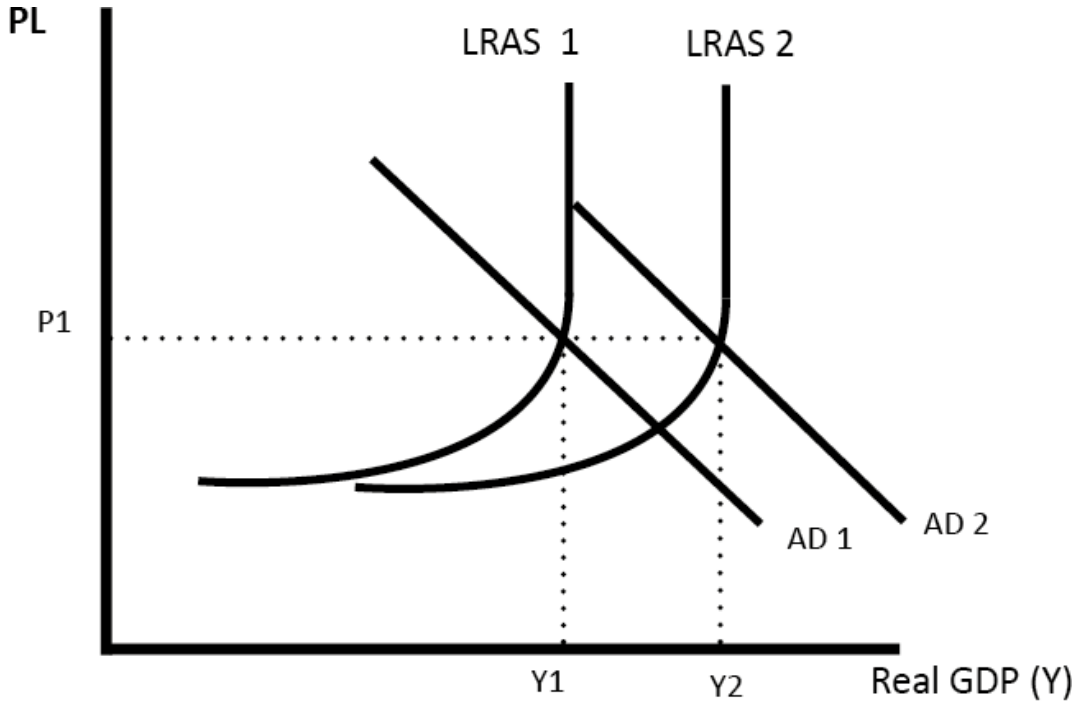


Supply side policies

Supply side policies are government attempts to increase productivity, make the economy more efficient and shift aggregate supply to the right. Supply side policies can be either:

1. **Interventionist** --- involving government spending to overcome market failure, e.g. building new roads to reduce congestion.
2. **Market oriented** --- policies to reduce regulation and allow free markets to function more efficiently, e.g. reduce minimum wages.

Supply side policies can help the economy in various ways:



1. **Lower inflation**. Shifting AS to the right will cause a lower price level.
2. **Lower unemployment.** Supply side policies can help reduce structural, frictional and real wage unemployment.
3. **Improved economic growth.** Supply side policies will increase economic growth by increasing AS
4. **Improved trade and balance of payments**. By making firms more competitive, they will be able to export more.

Market oriented supply side policies

Market oriented supply side policies attempt to reduce government regulation and barriers to the operation of the free market.

1. **Privatisation**. This involves selling state owned assets to the private sector. It is argued that the private sector is more efficient in running businesses because they have a profit motive to reduce costs and develop better services.
2. **Deregulation**. This involves reducing barriers to entry in order to make the market more competitive. Greater competition creates incentives to reduce prices and costs. For example, UK telecoms markets are now more competitive and this has helped reduce prices and increase efficiency.
3. **Reducing taxes**. It is argued that lower taxes (income and corporation) increase incentives for people to work harder, leading to higher output.
4. **Reducing state welfare benefits**. Lower unemployment benefits may create a bigger incentive for people to look for work and stay off benefits
5. **Reduced bureaucracy for firms**. If rules and regulations are removed then firms will have lower costs and be more productive.
6. **Labour market reforms**. Some economists argue that many European labour markets are too heavily regulated. For example, removing laws about hiring and firing workers and fixed hour contracts would increase labour market flexibility and encourage firms to hire workers. On the downside, greater labour market flexibility may lead to greater job insecurity for workers.

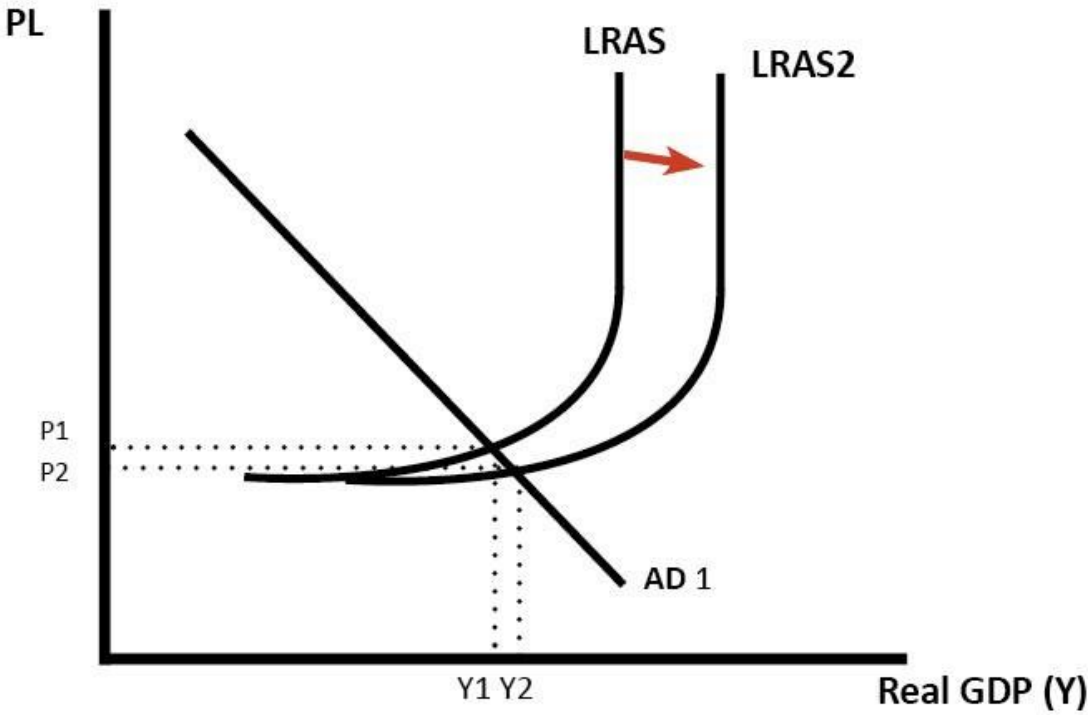
Interventionist supply side policies

Interventionist supply side policies attempt to overcome market failure and usually involve government spending.

- **Increased education and training.** Better education can improve labour productivity and increase AS. Often there is an under provision of education in a free market, leading to market failure. Therefore, the government may need to subsidise suitable training schemes.
- **Providing better information about available jobs**. To try and reduce frictional unemployment.
- **Improving transport and infrastructure**. In a free market, there is likely to be an under provision of public transport. If transport networks were improved, firms would benefit from lower costs.

Evaluation of supply side policies

- They will take time to have effect, e.g. it will take several years to create a more educated workforce.
- It will cost money to improve information and education, and therefore taxes will need to rise.
- Deregulation, such as lower benefits and reduced minimum wages, may cause side effects, such as increased poverty.
- Government failure may occur. For example, the government may have poor information about what to spend money on. For example, the government may finance the wrong kind of scheme, such as a new train line that is not used very much.
- In a recession, increasing AS may be insufficient. In a recession the most important thing is not supply side policies but policies to increase aggregate demand.

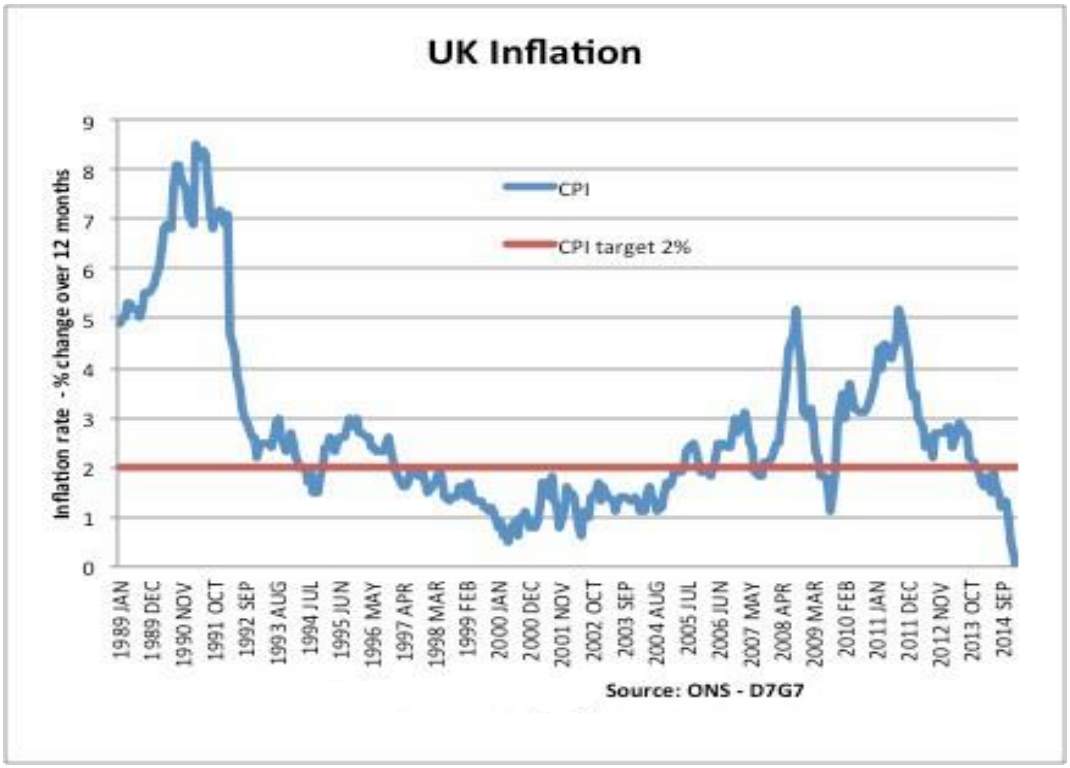


In this example, we successfully increase LRAS, but the economy is stuck in a recession, so the output is relatively small. In this situation, the economy needs an increase in AD (demand side policies).

- There is only so much the government can do. It is important to bear in mind that technological improvements and productivity gains come largely from the private sector.
- It is difficult for the government to transform productivity and create new technology. At best, the government can create a climate for private sector innovation to occur.

Monetary Policy

Monetary policy involves changing the interest rate or manipulation of the money supply by the monetary authorities.



Inflation compared to the governments target of 2%

Aims of monetary policy

1. Control the rate of inflation. Inflation target for MPC is CPI --- 2.0% +/---1
2. Maintain sustainable economic growth
3. Influence the exchange rate (not so important)

UK monetary policy

- Every month, the MPC meet to decide future interest rates. If they feel the inflation rate is likely to go above the target (e.g. due to a higher rate of economic growth) then they will increase interest rates to moderate demand and keep inflation low.
- If the MPC feel that inflation is likely to fall below the target and there is slow economic growth, they are likely to decrease interest rates to boost economic growth and prevent unemployment.

To determine future inflation, the MPC will look at various statistics such as:

- The rate of economic growth compared to the long run trend rate. If growth is faster than the trend rate, inflation is likely to occur.
- Wage growth. Higher wage growth can cause both cost--push and demand--pull inflation.

- Temporary factors like tax rises and commodity price rises will be given less importance because they do not indicate underlying inflation.
- Unemployment. High unemployment will tend to reduce wage inflation and so the MPC is more likely to cut interest rates to boost AD.

Effect of higher interest rates

Higher interest rates are also known as tight monetary policy

If inflation is forecast to rise above the inflation target, the MPC are likely to increase interest rates. This will help reduce AD and inflation because higher interest rates:

- **Makes borrowing more expensive**, therefore people spend less on credit reducing consumer spending. Firms will also be less willing to invest by borrowing money.
- **The cost of mortgages increases**, therefore people have less disposable income causing a fall in consumption. Therefore AD decreases.
- **Saving money in a bank is more attractive** therefore there is less spending and relatively more saving.
- **Exchange rate increases.** With higher interest rates, it is more attractive to save in UK banks. This increases the demand for the British Pound and increases the exchange rate. A higher exchange rate will reduce the demand for (X-M) because exports are more expensive, and imports cheaper.

Evaluation of monetary policy

In theory, a Central Bank can use interest rates to reduce inflation or increase economic growth. But, in practise, there are difficulties to the successful implementation of monetary policy.

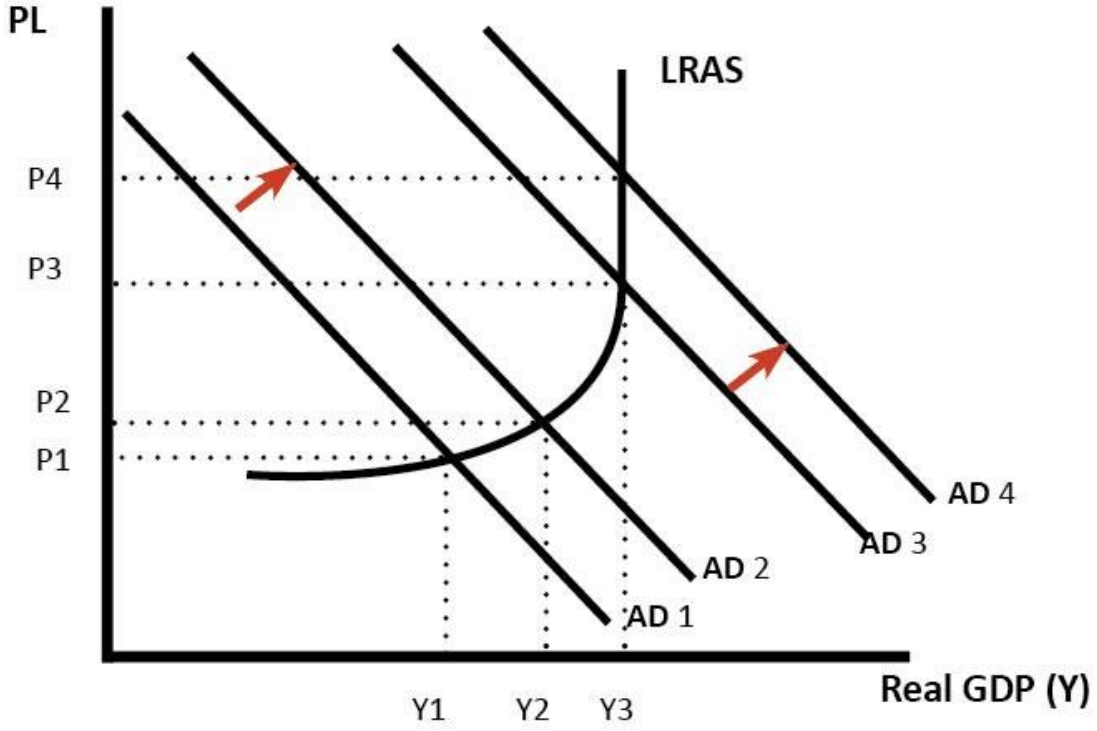
1. Other components in the economy

The effectiveness of monetary policy depends upon other variables in the economy, for example:

- If confidence is low, a reduction in interest rates may not increase demand because people don't spend more – despite cheaper costs of borrowing
- If taxes are rising this reduces consumer spending, and this may counter a fall in interest rates.
- If the world economy is slowing, this will reduce exports and AD; this would keep spending low --- even if there was a reduction in interest rates.

2. The effect of interest rates depends on the situation of the economy.

If the economy is close to full employment, a cut in interest rates is likely to just cause inflation significantly with only a small increase in real GDP. (AD3 to AD4)



- However if the economy has spare capacity, (e.g. at Y1 to Y2) higher AD will increase GDP, with only a small amount of inflation.

3. Time lags. There may be time lags for lower interest rates to have an effect. For example, higher interest rates may not reduce investment in the short term because firms will continue with existing investment projects.

4. Conflicts of objectives. Monetary policy may conflict with other macroeconomic objectives. If the MPC reduces inflation, this may lead to lower growth or higher unemployment.

5. Interest rates for whole UK. The MPC set interest rates for the whole of the UK, but if regions are growing at different rates, it may not be suitable. For example, if Wales was depressed, but rest of UK growing strongly. High rates may be damaging for Welsh economy.

6. Cost-push inflation. If there is cost-push inflation, we see rising inflation and lower economic growth. This presents a difficulty because to reduce inflation, will require higher interest rates, but this will lead to even lower economic growth. In this case, the Central Bank cannot solve both problems at once.

7. Difficulty of solving deflation. In a period of deflation (falling prices) cutting interest rates may be insufficient, because real interest rates are still quite high and there may be need to increase money supply (Quantitative easing) and or fiscal policy to stimulate demand.

Policies to reduce a current account deficit

A current account deficit implies the value of imports (of goods and services) is greater than value of exports. Policies to reduce a current account deficit on the balance of payments include:

1. Devaluation (expenditure-switching policy)

This involves reducing the value of the currency against others, and making exports cheaper and imports more expensive. This should increase the quantity of exports and reduce imports.

- We would expect a devaluation to lead to an improvement in the current account. However, it does depend upon the elasticity of demand for exports and imports. Demand needs to be relatively elastic for a devaluation to improve the current account.
- A problem with devaluation is that it can lead to imported inflation. This will reduce competitiveness in the long run, and will mean that the improvement in the current account might only be temporary.
- Also, in a floating exchange rate, the UK government does not set the exchange rate; therefore, they would need to rely on a market depreciation in the exchange rate.

2. Reduce consumer spending (expenditure-reducing policy).

The government could pursue tight fiscal policy (higher tax to reduce consumer spending) or the Bank of England could increase interest rates. Lower consumer spending will lead to less spending on imports, improving the current account.

- The UK has a high marginal propensity to import; therefore, a reduction in AD improves the current account significantly.
- Deflationary policies will also put pressure on manufacturers to reduce costs which will lead to more competitive exports, and so exports may increase.
- However, this policy will conflict with other macroeconomic objectives. With lower AD, economic growth is likely to fall, causing higher unemployment. The government is likely to feel that growth and employment are more important than the current account deficit.

3. Supply-side policies

These are policies aimed at increasing productivity and competitiveness. If successful, they will make UK exports more competitive and export demand will rise. For example, the government could try to deregulate labour markets to reduce wage costs and lower costs for exporters.

- Supply-side policies will take a considerable time to have an effect (e.g. it takes time to build new roads). Also, there is no guarantee that more flexible labour markets would improve competitiveness, because lower wages may reduce worker morale.
- However, supply-side policies would help other areas of the economy like economic growth and unemployment.